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ORIGINAL ARTICLES.

PRACTICAL POINTS GAINED IN THE TREATMENT OF ONE THOUSAND CASES OF INSUFFICIENCIES OF THE OCULAR MUSCLES.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association at Baltimore, Md., May 7-10, 1895.

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As the title suggests, my paper is entirely on practical points gleaned from a rather extensive experience in the correction of errors of refraction. I examine the ocular muscles of every case that I refract and when any muscular insufficiency is discovered, a record of it is made. The subject of heterophoria or insufficiencies of the ocular muscles has become one of such vast importance that I hesitated for sometime, wondering whether I had sufficient experience with a large enough number of cases to justify me in expressing an intelligent opinion. In looking over my case-book I find a record of about a thousand cases, of which I kept rather accurate notes, and I think the results obtained will support the views I entertain upon this subject. After all, it is following up one's cases and watching the results for several years afterward that gives us the experience worth placing upon the records of ophthalmology. My notes of cases include all muscular insufficiencies; those which I considered should only have general hygienic treatment, those who should have hygienic treatment as well as their errors of refraction corrected combined with the use of prisms. Of all my cases I find about 75 per cent. of them insufficiencies of the external recti, 25 per cent. of the internal, and but two-thirds of 1 per cent. of all the other ocular muscles. Insufficiencies of the external recti, were most frequent in low degrees of hypermetropia and hyperopic astigmatism, averaging about 70 per cent. and about 30 per cent. of the interni. Insufficiencies of the interni and externi in myopia and myopic astigmatism occurred in about 6 per cent. of all the cases.

I will consider the management and treatment of these cases under the following classification: 1, those occurring in hyperopia and compound hyperopic astigmatism; 2, those occurring in myopia and compound myopic astigmatism; 3, those occurring from constitutional, paralytic, and reflex causes.

Under the first classification the majority occurred in cases ranging from +.25 astigmatic, to a +.75 either hyperopic or compound hyperopic cases. The degree of variation ranging from .5° to 3° in the majority of cases. The insufficiencies occurring in refractive errors from +.75 D to +6 D. generally range from 3 to 20° of deviation. The majority of cases occurring in the lower refractive errors, ranging from .5° to 3° were no doubt due to spasm of the ocular muscles, and were generally relieved by correcting the errors of refraction, and proper outdoor exercises, and in those cases in which I did use prisms, it was generally only for a few weeks at the longest, when they would finally be more comfortable without them. I am now speaking of average results.

I wish to impress the fact that I obtained good results in most cases of moderate degrees of insufficiencies, by correcting the errors of refraction, and the advice of complete rest of the eyes for close work for some time, outdoor exercises and general tonic treatment. In patients with nervous temperaments, one-thirtieth gr. strychnia, and the triple valerianate pills, three times a day did very well in many muscular insufficiencies varying from .5° to 3°. I have seen a case of esophoria of 20°, reduced to 6°, within two weeks, from outdoor exercise alone, when no close work was done during that time. This patient has been doing continuous close work with ease for the past three months, with a 3° prism, but has no errors of refraction. I find very few muscular insufficiencies exist among patients who lead outdoor lives, such as farmers, ironworkers, lumbermen, etc. Operative measures are seldom necessary in the majority of muscular insufficiencies.

A music-dealer, who is myopic and reads music almost constantly, came to me nine months ago with an exophoria of 30° diplopia, and mentally very much distressed, caused by the condition of his eyes. I wanted to perform a tenotomy, but he would not allow it. I then advised complete rest from close work, and outdoor exercise. I did not see him for seven months. He then came to my office feeling quite comfortable, no diplopia, and at his usual occupation again.

I think tenotomies are necessary in but few cases, and then only where diplopia exists, the insufficiency of a permanent character, suffering considerable, and all other remedies fail. In those varying from 3° to 15°, the majority of cases found relief in prisms (combined with their refractive errors corrected) correcting from one-half to two-thirds of their insufficiency. Some of these cases when they are obliged to continue at their usual occupation, find relief for from six months to two years, when you generally find their muscular insufficiency has increased and operative measures may be necessary, or they will be obliged to stop their close work. This, most patients can not afford to do, and something must be done to relieve them, or you lose your case. Exercising with prisms has met with but partial success in my practice. I find that the majority of patients will not follow out one's instructions at home, properly, and to come regularly to the office to have it done, incurs an expense which most of them can not meet.

The following exercise in a great many cases gives me just as good results, and will be carried out much more effectually, and with less expense to the patient. I instruct them to spend a quarter of an hour twice a day sitting in an erect position and fix the eye or eyes at a point either to the extreme right or left, on a horizontal plane and at right angles to the body, keeping them fixed in that position for a minute or two if possible, and then repeating the experiment regularly. Tell your patient to always sit in the same position, looking at the same object, and move the eyes in a similar manner, and you will generally have the same muscular effect upon the ocular muscles as exercise does upon any other muscles of the body. When this is done regularly for two or three weeks you will usually have gained from 5° to 10° in convergence, or a few degrees in divergence, according to the muscle exercised.

I think the tendency toward performing tenotomies for every insufficiency of a few degrees is lessening and, instead, we will urge more rest, and outdoor exercise, and such hygienic instructions as will improve the general health.

2. Those occurring in myopia or compound myopic astigmatism. Muscular insufficiences in myopia, in the majority of cases, involve the internal recti, causing a divergence of from .5° to 30°, the average ranging from 10° to 15°. My experience in the correction of these muscular insufficiencies has not been so satisfactory with rest and outdoor exercise, as in those occurring in hyperopic cases. I have been obliged to prescribe more prisms for continuous use in myopic insufficiencies than in hyperopic ones. The majority of cases with an outward deviation of from 10° to 15°, will feel comfortable with a prism correcting about half their error, for constant use. Few in my experience can stand even two-thirds of a full correction and wear them constantly, but in esophoria the majority of cases felt more comfortable with a full correction. I have only performed tenotomies in myopic insufficiencies in cases of from 15° to 25° of deviation, and have generally had good results with prismatic corrections in those under 15°.

My results from tenotomies combined with advancements were generally good in about 30 per cent. of those cases that I was enabled to follow up, which was from six months to two years afterward.

In reference to the insufficiencies of the superior, inferior and oblique muscles, my experience has been rather limited. They are so rare that when they do occur, correction of the errors of refraction, the use of prisms, and exercising of the defective muscles generally remedies the defect. I have one case now with an insufficiency of 16° of the inferior rectus, upon which I wished to perform a tenotomy, but owing to the comfort he derives from a 4° prism, base up and down, to each eye, he is not yet willing to submit to an operation. He has been wearing these prisms since September, 1894, without any change.

3. Those occurring from constitutional, paralytic, and reflex causes. I have had quite a number of insufficiencies following severe and prolonged attacks of malaria, typhoid fever, and a few following intense cerebral pains which seemed to extend to the base of the brain, also a number of paralytic cases produced by traumatic and apoplectic causes. Those of a reflex character were principally in hysterical patients and only required treatment upon general principles when complete recovery would always occur. Those following malaria generally vary from 2° to 8°, and when prisms are temporarily worn, anti-malaria and tonic treatment given, with outdoor exercise, they generally all get well. In paralytic cases, electricity and strychnia with exercising the muscles often assists nature considerably, especially in the young, but in those advanced in years the results are not flattering. My experience with prisms in people over 40 years of age, for muscular insufficiencies has not been very extensive, but I find that the majority occurring in nervous cases require frequent changing and are not very satisfactory; most of them get along better without them. A summary of my views upon insufficiencies of the ocular muscles are as follows:

1. That following up one's cases for one to two years is necessary and should be done in all muscular insufficiencies, to tabulate results for publication.

2. Those cases involving the recti muscles, occurring in hyperopia and compound hyperopic astigmatism of from 5° to 15° combined with errors of refraction, will generally all do well with their refractive errors corrected, muscular exercises, outdoor life, tonic treatment, and the temporary use of prisms.

3. Those occurring in myopia and compound myopic astigmatism, require the use of prisms more constantly and are not benefited quite as much by muscle exercising as those occurring in hyperopia, etc. Tenotomies with advancements are generally more effective than in hyperopic cases.

4. Those occurring in constitutional, paralytic and reflex cases require plenty of rest, outdoor exercising, the temporary use of prisms, electricity and general tonic treatment.

5. Tenotomies are not necessary in most cases, and should not be done until all other remedies fail.

6. That there are some cases of esophoria of slight degrees of deviation that require nothing but rest and outdoor exercise to effect a cure.

HYSTERICAL INSUFFICIENCY OF CONVERGENCE.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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The object of the present paper is not to put on record a few occasional cases of hysterical affections of ocular muscles, but to present what I believe to be a not uncommon type of functional disease, viz., asthenopia with insufficiency of convergence as a hysterical manifestation. In speaking of insufficient convergence, I do not wish this anomaly to be identified with exophoria. The former condition can exist, as some of my cases show, without any tendency to divergence of the eyes for distance, while exophoria itself can sometimes occur without much reduction of convergence. But for obvious reasons the two anomalies are often associated.

The converging power can be called insufficient only, if the eyes can not converge up to the normal limit in the absence of either paralysis or strabismic shortening of any of the eye muscles. The simplest and only direct way of measuring the amplitude of convergence is to test how near an object can be approached without being seen double. An illuminated slit in a black screen is a serviceable test

object. The most graphic way of stating the converging power in figures is to express it in metric angles (m.a.) according to the nomenclature of Nagel, adopted especially by Landolt. A normal person can converge for a distance of at least 10, but more often 8 or even less centimeters and has therefore something over 10 to 12 m.a. of convergence (C).

The measurement by means of prisms held base outward is not a direct test of the converging power, but only of the patient's ability to converge while viewing a distant object. Since convergence under these circumstances is not a normal movement, but a muscular performance which can be increased by training, its determination does not give as definite a measure of the strength of convergence as the approximation test.

If we measure, in the next place, the diverging power by means of the strongest prisms, base inward, which can be "overcome" without diplopia of either eye and the range of extreme inward and outward motion, we have acquired all necessary information regarding the muscles which move the eyes in the horizontal plane. As Landolt has suggested, it is convenient to express also abduction in metric angles, and to call it the negative part of convergence. (—C). With average intra-ocular distance a metric angle is represented by the deviation due to a prism of 7°. Hence we may say that normal persons have at their disposal C. at least=10 to 12 m.a. and —C=1 m.a.

Whenever convergence is restricted, the relation of —C to +C suggests whether the insufficiency depends on purely muscular conditions or whether it is due to weakness of the nerve center. If the action of the internal recti muscles is insufficient, because they are less favorably attached to the globe, or are less strongly developed than the antagonistic externi, the deficiency of +C is accompanied by an increase of —C, although usually the number of superfluous m.a. of abduction (—C), is not quite equal to the number of m.a. of +C lacking. The "muscular" form of insufficient convergence is almost always indicated by exophoria.

If, on the other hand, +C is diminished, while—C is either not proportionately increased or normal or even less than normal, the cause is evidently to be sought in insufficient nervous control of the converging muscles. One exception, however, must be noted, viz., the mechanical interference with the movements by the elongation of the eyeball in high degrees of myopia. (The abridgement of convergence in exophthalmic goitre is perhaps also of mechanical origin).

The experiments of Adamuek (1870) on animals have shown the existence of a separate center for the movement of convergence in the region underneath the corpora quadrigemina. That this center can be attacked by disease without paralysis otherwise of the ocular muscles has been established by Parinaud and confirmed by a number of other observers. The occurrence of an isolated paralysis of convergence with integrity of the conjugate lateral movements of the eye, has been observed repeatedly in various forms of organic brain disease.

It has also been learned clinically, that the convergence is at times decidedly enfeebled in neurasthenia without organic lesions.

There seem to be, however, but few observations on record illustrating a paresis of convergence of hysterical origin. The best observed case is that of Borel (*Archives d'Ophthalmologie*, 1887, p. 356). In his exhaustive article on hysterical affections of the eye muscles, he cites the case of a young hysterical girl, whose converging power was excessively reduced. Every effort at convergence was so painful that no accurate measurement could be made. Abduction was but slightly increased. A tenotomy of the externus gave temporarily great objective and subjective improvement, but the gain in convergence was soon lost again. A year later an advancement of the internus resulted in a complete cure. Borel quotes also a few casual records of other writers illustrating insufficiency of convergence in hysterical patients. Gilles de la Tourette (*Traité Clinique et Therapeutique de l'Hysterie*, Paris, 1891, p. 424), states in his book on hysteria that he has often observed insufficiency of convergence, but does not give details. The extensive literature on heterophoria by American authors contains the histories of many patients unmistakably hysterical whose asthenopia seemed to depend on exophoria, often of a very low degree. But as most of the authors do not give any direct measurement of the amplitude of convergence, the presumption that some of the cases can be considered as instances of hysterical paresis of convergence can not be verified. (For instance, see I. Dunne, *American Journal of Ophthalmology*, January, 1894.)

My own experience has shown me a fair number of typically hysterical patients with insufficiency of convergence and suffering from asthenopia, headache or spells of vertigo. These subjective symptoms were clearly of ocular origin, inasmuch as they came on or became more pronounced on using the eyes, while there were either no other ocular anomalies at all, or while the correction of any existing defects gave the patient but incomplete relief. The history of the asthenopia dated back an indefinite time in most instances; in a few, the time of onset was more recent. The degree of insufficiency varied. The most pronounced cases had but 4 to 5 m.a. of C. but unless a strong effort was made, the diplopia began even at a distance of 40 centimeters. With this insufficiency there was either no exophoria for the distance, or at the most 2° to 3° (prism) in some of the patients. The negative convergence (abducting power) was not reduced, being either normal or slightly above but not over 1.5 m.a. (11° prism). Cases with higher abducting power do not seem to me to come under the heading of this article.

In the more pronounced cases, the insufficiency of convergence was accompanied by a *reduction* of *accommodation*. The use of convex reading glasses did not, however, give any relief. The degree of subjective annoyance did not correspond closely with the objective weakness, but varied rather with the intensity of the other neurotic symptoms. Moreover, under proper hygiene and moderation in the use of the eyes, several patients gained considerably in comfort, even while doing some eyework without an equivalent improvement (although there was some) in the objective condition. The occlusion of one eye while working did not help the patients. In view of these observations it seems to me that it is not fully established that the asthenopia or headaches of such patients are entirely due to strain of the internal recti muscles. I would incline rather to the view that asthenopia, insufficiency of convergence and defective accommodation, are all associated manifestations of hysteria.

Therapeutic efforts to increase the convergence by practice with prisms or by approaching vertical lines while attempting to overcome diplopia were not successful. I have had no experience with operative measures except in one case. Tenotomy of both externi proved practically useless, as I might have foreseen, had I clearly recognized the hysterical origin at first. Advancement of the interni holds forth more promise and has been successfully employed by Landolt in Borel's case of hysteria and in insufficiency of convergence in neurasthenia. I have relied mainly on the hygienic management usually directed by neurologists in hysteria. Of six cases observed for long periods, one got practically well, two were materially benefited, while the other three were only temporarily improved or remained in an unchanged condition. I will now give a condensed history of my most conclusive observations:

Miss N., 35 years old complained February, 1894, of spells of diffuse migraine of one or two days' duration, at intervals of a few days. Her complaints date back years, but are worse since the last twelve months. The spells may be accompanied by flightiness. Beside she is apt to get transient headache, nausea and dizziness on using the eyes, but is not conscious of any pain or strained feeling in the eyes. She said she was in good health at the time, and, indeed, seemed to be well nourished and not anemic. Continued observation and further inquiry into her past history left no doubt, however, as to the existence of hysteria. Excessive tremor on emotion and even staggering, periodic numbness of the legs, lump in the throat, long periods of sleeplessness, continuous anorexia, transient uncontrollable vomiting and diarrhea, alternating with long periods of normal digestion, fugitive edema of the feet, proved to be positive evidence of hysteria even in the absence of some of the more typical stigmata. The field of vision for light and colors was not at first contracted, but a perimetric examination showed repeatedly marked fatigue-shrinkage for blue. The eyes were found healthy, with vision just below 20-20. The test, with and without homatropin, showed As. H.=0.5, axis 75° R. and 90° L. The accommodation was reduced to less than 5 D. (P. P. at 8—9″) while the convergence could be exerted up to 6 m. a. although even at 12″ approximation, diplopia would sometimes begin. Abduction = 1.3 m. a. (9° prism). There was no hyperphoria or heterophoria of any kind and no interference with the lateral rotation of the eye. She was given cylinder + 0.5 D. and hygienic directions.

During three weeks' observation the glasses were found of only moderate benefit in reading, but were refused for distance on account of producing dizziness. The ocular condition and the general discomfort being unchanged, I then made a complete tenotomy of the left external rectus. This did not alter the muscular power in the least, but for two weeks she remained free from headaches.

During the third week she had again a severe spell of migraine with nausea. Since then I found the convergence more reduced—down to 5 m. a., while the abduction had risen to 1.5 m. a., I tenotomized the right externus completely. For the first few days the operation raised the convergence to about 7 m. a., and lowered the abduction to 1 m. a. The abducting power has practically remained stationary since that time, but the convergence soon sank to 4 m. a. at the utmost, while a decided effort was and is yet required to prevent diplopia at 15″ distance.

In spite of the want of objective success of the operation, she has been able to use her eyes with less discomfort since that time, and her headaches are not as frequent and generally not as severe as prior to the operation. She can often read for a good part of an hour without suffering. Yet the hysterical origin of the defective convergence is more evident since the operation has forcibly called her attention to the eyes, by the forced efforts with which she pushes the print away from her to a distance beyond ten inches while being tested, and the jerking back of the head when the illuminated slit is approached to the eyes. Her accommodation is still as defective as formerly or even more so, yet she can read persistently at 15″ distance and not suffer until after an hour or more.

Since the 0.5 D. cylinders were not tolerated for the distance, they were changed some months after the operation to 0.25 D. with the same axes. For a time she claimed a decided benefit, both as to ability to work and in the prevention of the dizzy spells. But on comparing her records accurately during times when she wore them and periods when she discarded them, I could not convince myself that they really produced much difference.

On comparing my case-books for the past four years, I find five other records of women with characteristic hysteria with persistent asthenopia and headache (and in two instances vertigo). Objectively, these patients presented insufficiency of convergence associated in three of them with reduced accommodation, but no heterophoria (beyond 1° to 3° exophoria in two instances). In all these, the correction of any existing refractive anomaly and the closest attention to the general health gave for the time only incomplete relief from the asthenopic symptoms. Four of these patients have been seen again at long intervals; in three of them there have been long periods of remissions; only one of them, however, seems permanently relieved.

The combination of asthenopia with reduced convergence and accommodation in persons free from organic nervous disease and not distinctly neurasthenic, though of a neurotic disposition, occurs also in males. The following is the most typical illustration which I have seen:

Master O., 15 years old, has for some years complained of tiring and blurring on persistent use of the eyes. Within the last year he gets headaches during school hours. He is also annoyed by shortness of breath when exercising. He seems to be in perfect health, but his physician, Dr. N. S. Davis Jr., who kindly referred him to me, had found dilatation of the heart. He has at times obstruction of nasal respiration, especially on the left side. There was a projecting spur on the left side of the nasal septum, which toward its rear end, touched the inferior turbinated body. Judging this to be the cause of the difficult breathing and probably also a factor in the production of his headaches, which were more pronounced on the left side, I chiseled off the septal exostosis on March 27, 1894. Within a few days the breathing became perfect, even during violent exercise, the headaches ceased nearly entirely and Dr. Davis could no longer detect any cardiac anomaly.

At the time of the operation the examination of the eyes showed: R. E., V. 20-25 C + 0.5 ax. 90 = 20-20. L. E., V. 20-25 C. + 0.25 ax. 90 = 20-20.

Under homatropin: R. E., V. 20-60 C. + 0.5 ax. 90 (.) S + 0.5 = 20-20. L. E., V. 20-60 C. + 0.25 ax. 90 (.) S + 1 = 20-25.

The accommodation was nearly normal, P. P. being = 5″. As he could read at 5″ distance, the convergence was not tested. Abduction = prism 6°. No heterophoria.

Two weeks after the nasal operation when he considered himself well in every other respect he was still not able to use his eyes long. As he had previously used S. + .75 D. without any benefit, I advised R. E. cyl. + 0.5 D. ax. 90°. L. E, S. + 0.5 D. For about three weeks the glasses seemed to give him complete satisfaction and indeed he said he missed them so much whenever he took them off, that it aroused my suspicion of how much their influence might be due to suggestion. He returned, however, soon with the old story, that the use of the eyes gave him discomfort, whether glasses were used or not. On now testing him, I found the convergence reduced to 5 m. a. with tendency to diplopia even at 15″ distance (2.5 m. a.), and there was no heterophoria. This condition remained unchanged during the summer in spite of a vigorous outdoor life.

There are no stigmata in this instance, which permit me definitely to call it hysteria. The neurotic disposition, however, was manifested by the existence of nasal reflexes and by the boy's muscular restlessness while sitting in the chair—at times almost suggestive of chorea. As I have learned from conversation with different neurologists, hysteria does not always appear in our country with the typical stigmata which European authorities have described. It is hence a question open to discussion whether an otherwise unexplained asthenopia with reduction of

convergence, not due to an excess of power in the external muscles, and especially when accompanied by diminished accommodation may not by itself be considered an evidence of hysteria, if neurasthenia be excluded.

In my records of the last four years, I find three other illustrations of this condition—two in boys and one in a young woman. In none of these was there satisfactory evidence of hysteria, although various neurotic symptoms were present. On the basis of other observations not recorded with sufficient completeness to bring them forth as evidence, I am led to the opinion that the condition described in this paper is not an infrequent one.

REPORT ON THREE CASES OF PARALYSIS OF THE SUPERIOR RECTUS, AND SOME REMARKS.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY E. J. BERNSTEIN, M.D.

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One requires considerable temerity to ask the time and attention of a body of specialists for any remarks on this subject without giving anything new, but I seek my excuse in this, that I wish to record two simple and uncomplicated cases of paralysis of the superior rectus, and possibly a third. I say, possibly a third, because from the remedy employed to correct it, I have some doubts whether this was really the case.

We know from Mauthner, Graefe-Saemisch and such authors that isolated paralysis of this muscle is one of the rarest affections which disturb ocular equilibrium. It was with a great deal of ignorance but much assurance that I saw the first case, which is the one I call the doubtful one, and following the rule that rare cases occur in groups, saw the two soon after, which were undeniably affections of this sort. Is, then, this form of paralysis really so very rare? Among some eighty thousand cases examined by Mauthner, von Graefe, Schubert and Schoeler there are but twenty cases reported, yet Hulke out of nineteen cases of oculo-motorius paralysis, found five in which that portion which enervates the superior rectus was alone affected. I shall neither enter into any disquisition on the anatomy or physiology of this muscle, for I am sure you are all thoroughly at home here, nor shall I burden you with the history of the cases.

There is one point, however, I would beg of you who are teachers, and that is that a student should not leave you under the impression that as the rectus externus and internus are antagonistic, so are the superior and inferior; but that these two are only antagonistic as regards elevation and depression and the rotation of the corneal axis; they are both, together with this, *adductors*. The rectus superior can only act as a pure elevator when the eye is abducted 23°, as then its plane and that of the visual axis is identical, and this power diminishes in direct proportion as the eye is adducted.

Paralysis in the early stages is readily diagnosed by the failure of the eye to act, or acting only with great effort when vision is directed in the line of the normal action of this muscle; or vertical diplopia occurs in looking up, which (diplopia) is increased in the upper, and particularly in the upper and outer field of fixation. The false image thus caused is crossed, displaced upward and tilted away from the real image.

In this paralysis, which is possibly most frequently bilateral, diplopia may occur only in the upper and outer field; in more pronounced cases it will be seen in addition when the eye is abducted in a horizontal plane, and in complete paralysis it will be marked when the patient is looking straight ahead, and may even be apparent a short distance below the horizontal plane. The x. is most marked in abduction and is distinguished from ordinary x. by the fact that divergence is either normal or slightly diminished rather than increased.

Mauthner says the tilting of the false image is not recognized by the patient unless his attention is directed to that, yet two of my cases and five of Dr. Duane's recognized it.

The latter, when discussing apparent bilateral paralysis says: "I have noticed that the relative strength of the two paretic muscles seems to vary. In the primary position there seems to be little tendency to vertical diplopia, yet it is found in both outer and upper fields. There is no other condition which presents precisely the same features, except an isolated spasm of the inferior oblique, but the unchanging character of the phenomenon observed and the absence of any cause that could produce so unique a variety of spasm, render it extremely improbable that this can be the sole condition present. Often apparent bilateral paralyses are really due to paralysis of one superior with compensatory spasm of the inferior oblique of the same eye. That this spasm may occur seems shown by the variability of the test. Even in more marked paralysis the tendency to vertical diplopia in looking directly ahead is slight, and is altogether absent in convergence and when the eyes are depressed. This latter statement requires some explanation. There may be no actual vertical displacement in convergence, but there is sufficient to cause a blurring, and the great effort made to avoid this is the important factor in the asthenopia. This is shown more decisively in the slight cases of paralysis when x. in reading is only 3° or 4°. We know that even 5° may be normal with orthophoria in the D. Naught remains then to account for the asthenopia but the vertical defect and the effort made to overcome it. Together with the various tests employed, I find the one suggested by Gullstrand of great value. Instead of observing the reflex of the window on the patient's cornea, one might, as I do, substitute the Placedo disk or the mirror of the skiascope and thus slightly modify the test. As originally proposed, the patient stands opposite and a short distance away from a window. Between the two, stands the observer. While fixing the bridge of the latter's nose, the patient moves his head in various directions, while the observer watches the corneal reflex in both the patient's eyes. When mobility is normal, the reflex in all positions of the head covers the pupil, but when there is a loss of mobility in any direction, the reflex moves in the pupil in that direction. In my cases the refraction of the patients was Em. in one, and slight hyperopic astigmatism in the other two. As to the etiology of these paralyses, I beg to differ from Duane, not that they may not arise from a weakness of the muscle due to malformation, faulty insertion or arrest of development, but I also believe they may arise from a lesion of the twig of the oculo-motorius, sup-

plying this muscle, just as we may have isolated paralysis of single pairs of muscles in the larynx supplied by the recurrent laryngeal.

Thus, the one case in which refraction was Em. had had lues some years before. Anti-luetic treatment instituted cured the case. It seems but reasonable to suppose that lues can affect a muscle which we know is, by weight and measurement, the weakest of all ocular muscles.

When after a reasonable delay, medical treatment does not suffice, we must resort to surgery; not to tenotomy of the depressor of that eye or even of the sound eye, but either to advancement of the superior rectus at fault, or tenotomy of the sound one. Nowhere is sufficient stress laid upon this. Noyes advises tenotomy of the antagonistic muscle and generally that of each eye, when speaking of paralyses of the externi and interni, but says nothing about this special form. Possibly, we think no one would be foolhardy enough to try tenotomy of the inferior rectus to remedy the evil.

The first case of this series, who was rid of his troublesome diplopia by just such an operation, I believe was a case of paralysis of the superior rectus. This, on the face, would appear feasible, as these two muscles are antagonistic in just that sphere of action which causes the asthenopia. All agree ordinarily, that some form of prismatic correction will suffice, especially when coupled with muscular exercise.

In the minor affection of this muscle, just a word in conclusion. I doubt if any careful worker fails to test muscular equilibrium in every case of asthenopia. I am sure you will find many cases of vertical deviation amounting to as high as 1.5° and, indeed, I have seen several higher than this, in which the correction of the refraction sufficed. Just how common this is, I should hesitate to say, but in my last hundred cases of asthenopia, I found twelve with various degrees of hyperphoria, and of these but one required correction for a hyperphoria of 1.5°.

Though my experience is naturally somewhat limited, I am still at a loss to understand how it is that some men find such frequent and urgent need for correction of hyperphoria of even .25°. I should not for one moment wish to be understood as doubting the accuracy of this observation; I simply do not meet with such cases.

Finally, it seemed that the American ophthalmological world was in danger for a time of going heterophorically mad. It appears that the pendulum is beginning its backward swing, and we may now be approaching a more rational conception of this subject.

My attention was called during the session to a condition of diplopia which is normal to every one. That is, in near vision, even as far off as one to two meters, you can produce a diplopia very much like that of the paralysis of the superior rectus but the images are not tilted, and this diplopia disappears in the distant vision test, which is not the case where a true paralysis of the muscle is present.

800 Madison Avenue.

When Physicians can not Testify in Pennsylvania.—No person authorized to practice physics or surgery, it has been enacted in Pennsylvania, shall be allowed, in any civil case, to disclose any information, which he acquired in attending the patient, in a professional capacity, and which was necessary to enable him to act in that capacity, which shall tend to blacken the character of the patient, without his consent.

REPORT OF THE COMMITTEE ON THE PREVENTION OF BLINDNESS FROM OPHTHALMIA NEONATORUM.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY LUCIEN HOWE, M.D.
BUFFALO, N. Y.

At the meeting of the AMERICAN MEDICAL ASSOCIATION held in Milwaukee in 1893, the following resolution was unanimously adopted by the Section on Ophthalmology:

WHEREAS, There are in the United States several thousand who have become blind because of ophthalmia neonatorum; and

WHEREAS, This unfortunate result is largely preventable, being due to the neglect of nurses and midwives; therefore

Resolved, That it is the sense of this Section of the AMERICAN MEDICAL ASSOCIATION, that a committee of five be appointed by the chair to urge in all parts of the country, by personal application, by circulars to physicians and legislators, and by blank forms of a desirable law, such legislation as will tend to lessen the blindness caused by this disease.

Upon careful consideration, it was decided that the following would be about the best form of a law to suggest for adoption in the various States, this being almost the same as that which had already been passed in New York, Maine and Rhode Island:

SECTION 1.—Should one or both eyes of an infant become reddened or inflamed at any time after birth, it shall be the duty of the midwife, nurse, or person having charge of said infant, to report the condition of the eyes at once to some legally qualified practitioner of medicine of the city, town, or district in which the parents of the infant reside.

SEC. 2.—Any failure to comply with the provisions of this act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

SEC. 3.—This act shall take effect on the first day of June, eighteen hundred and ninety-one.

Early in December, 1892, a circular letter was sent to all of the prominent ophthalmologists throughout the country, asking their coöperation in obtaining such legislation. They were requested to call the attention of the several State medical societies to the importance of the subject, and to ask these societies to give their approval of such a law in order that committees could present the matter to the Legislature with the strongest medical indorsement.

About four hundred and ten of these first letters were sent to ophthalmologists and to leading physicians in various States, and the replies, together with suggestions in regard to the legislation, necessitated the writing of two hundred and fourteen additional letters. Of all of these, copies are on file of the letters sent and the replies also have been retained.

The accompanying is a tabular statement of the most recent data that can be obtained, in regard to the condition of legislation for the prevention of blindness, each State being given alphabetically:

To sum up the results, they may be stated as follows:

The law had, in substance, already existed in three States: New York, Maine and Rhode Island.

Since then, it has passed both houses and been signed by the Governors of six States: Minnesota, Ohio, Maryland, Connecticut, Missouri, and New Jersey.

It is therefore in operation in a population of over eighteen million. Moreover, a sufficient number of

THE PRESENT CONDITION OF LEGISLATION FOR THE PREVENTION OF BLINDNESS.

State.	Will Co-operate.	Resolutions Favoring Legislation Adopted.	Committee Appointed.	Legislation.
Alabama	Dr. B. J. Baldwin, Montgomery. " S. L. Ledbetter, Birmingham. " W. H. Sanders, Mobile. " Y. G. Woodson, Birmingham.			
Arkansas	Dr. H. Moulton, Fort Smith. " J. W. Scales, Pine Bluff. " George W. Smith, Fort Smith. " C. S. Gray, Little Rock.	State Med. Soc., May, 1894.		
California	Dr. W. D. Babcock, Los Angeles. " A. Barkan, San Francisco. " H. Bert Ellis, Los Angeles. " George H. Powers, San Francisco. " W. F. Southard, San Francisco.	State Med. Soc., Dec., 1893.		Bill presented in Senate.
Colorado	Dr. John Chase, Denver. " F. D. Green, Pueblo. " E. C. Rivers, Denver. " J. R. Robinson, Colorado Springs. " C. E. Walker, Denver.			
Connecticut	Dr. W. Y. Bacon, Hartford. " H. W. King, New Haven. " S. B. St. John, Hartford.			Law passed.
Georgia	Dr. A. W. Calhoun, Atlanta. " R. O. Cotter, Barnesville. " James M. Hull, Atlanta. " C. H. Peete, Macon.			
Illinois	Dr. Boerne Bettman, Chicago. " W. F. Coleman, Chicago. " Henry Gradle, Chicago. " C. D. Wescott, Chicago.	At State Medical Society, held April 15, 1894.	Dr. B. Holmes, Chicago. " E. J. Doering, Chicago. " Boerne Bettman, Chicago. Chairman.	Bill presented in Senate.
Indiana	Dr. A. Blitz, Indianapolis. " Geo. H. Keiper, La Fayette. " I. P. Morrell, Terre Haute. " J. L. Thompson, Indianapolis.	State Med. Soc., May, 1894.	Dr. George H. Keiper, La Fayette. " J. L. Thompson, Indianapolis. " A. Blitz, Indianapolis. " F. C. Heath, Indianapolis. " A. F. Schaffer, South Bend.	Passed one house, defeated in other.
Iowa	Dr. J. C. Dunbary, Sioux City. " C. M. Hobby, Iowa City. " Henry B. Young, Burlington. " W. C. Pipino, Des Moines.	At State Medical Society, 1894.		Passed one house, defeated in other.
Kansas	Dr. G. A. Wall, Topeka.			
Kentucky	Dr. William Cheatham, Louisville. " S. C. Dabney, Louisville. " J. M. Ray, Louisville.	South Eastern Kentucky Medical Society, July, 1894.		
Louisiana*	Dr. H. D. Bruns, New Orleans.			Passed Senate, defeated in House.
Michigan	Dr. Don M. Campbell, Detroit. " F. Carrone, Ann Arbor. " Leartus Connor, Detroit. " J. M. Cook, Muskegon. " Robert W. Gillman, Detroit. " D. M. Greene, Grand Rapids. " J. F. Noyes, Detroit.	At State Medical Society, May, 1894.	Dr. F. Carrone, Ann Arbor, Chairman. " R. W. Gillman, Detroit. " Don Campbell, Detroit.	Bill presented in House.
Missouri	Dr. Y. E. Murrell, St. Louis.			Law passed.
Montana				
Nebraska	Dr. H. Gifford, Omaha. " Isador Gluck, Omaha			
New Hampshire				Presented in the House.
New Jersey	Dr. Walter B. Johnson, Paterson.	State Medical Society, held June 26, 1894.	Dr. Walter B. Johnson, Paterson, Chairman. " Charles I. Kipp, Newark. " P. A. Harris, Paterson.	Law passed.
North Carolina	Dr. Richard H. Lewis, Raleigh.	At State Medical Society, 1894.	Dr. A. W. Knox, Raleigh. " Hubert Haywood, Raleigh. " K. P. Battle, Raleigh. " Y. S. Burbank, Washington. " Y. D. Haigh, Fayetteville.	
Oregon	Dr. S. G. Eaton, Portland.	State Medical Society, 1894.		
Pennsylvania	Dr. J. A. Lippincott, Pittsburg. " G. de Schweinitz, Philadelphia. " P. D. Keyser, Philadelphia. " C. L. Frey, Scranton. " G. M. Gould, Philadelphia. " Charles A. Oliver, Philadelphia. " Charles McIntire, Easton. " G. Oram Ring, Philadelphia. " John B. Roberts, Philadelphia. " F. N. K. Schenk, Philadelphia. " Lewis H. Taylor, Wilkesbarre.	State Medical Society, held May, 1894.	Dr. F. H. Hansell, Philadelphia, Chairman. " J. A. Lippincott, Pittsburg. " Schneiderman, Philadelphia.	Bill presented in Senate.
South Carolina	Dr. Charles W. Kollock, Charleston.	At State Medical Society, 1894.		Passed one House, defeated in other.
Tennessee	Dr. L. C. Graddy, Nashville. " G. C. Savage, Nashville.			
Vermont	Dr. J. H. Woodward, Burlington.			
Washington	Dr. R. L. Thompson, Spokane.			
West Virginia	Dr. G. A. Ashman, Wheeling.	At State Medical Society, 1894.		

*The law passed the Senate, but was defeated in the House. Will be presented again.

convictions have already been obtained to show the efficiency of some such measure when prosecution is properly carried out.

It has been presented and referred to committees in five States: Pennsylvania, California, Michigan, New Hampshire and Illinois.

It has passed one House and been defeated in the other in four States: Louisiana, South California, Iowa and Indiana. In each of these, the committee intend to present it next year.

In four States: Arkansas, Kentucky, North Carolina and West Virginia the bill has been indorsed by local or State medical societies but no effort made to present it to the Legislature.

In the other States, no official action has been taken in regard to it. It is important to note, however, that more than eighty ophthalmologists and other prominent physicians have promised in writing to give their cooperation and hearty assistance to such legislation, and, with the plan thus thoroughly

organized in so many portions of the Union, it is not too much to hope that a few years will find this law or its equivalent on the statute books in nearly every State in the Union. The committee desires thus to report progress.

Signed, LUCIEN HOWE, M.D.,
GEORGE M. GOULD, M.D.,
G. C. SAVAGE, M.D.,
HENRY GRADLE, M.D.

The above report with the table represents the information obtained by the committee at the time the report was made. It should be said, however, that since then practically the same law has been passed in Pennsylvania and Illinois, so that at present it exists among a total population of over twenty-eight million people.

183 Delaware Avenue, Buffalo.

NOTE.—The above report with the table represents the information obtained by the Committee at the time the report was made. It should be said, however, that since then practically the same law has been passed in Pennsylvania and Illinois, so that at present it exists among a population of over twenty-eight million people.

THE RELATIONSHIP BETWEEN THE EYES AND THE BRAIN.

Read in the Section on Ophthalmology at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY JAMES A. LYDSTON, M.D., PH.G.

Oculist and Aurist to St. Joseph's Hospital, Chicago; Lecturer on Ophthalmology and Otology, Chicago College of Physicians and Surgeons; President of the Alumni Association, Chicago College of Pharmacy; Member of the American Medical Association, the Chicago Academy of Medicine, etc.

CHICAGO.

The frequency of eye disease originating from brain lesion is all sufficient to render an attempt to trace a closer relationship between the eyes and the brain justifiable and merits, by reason of its utility in ocular and brain diagnoses, very careful consideration. If we are dealing with structural ocular changes we are often able to define the etiologic factor at once, but at times we are confronted by functional disturbances which are but vaguely explicable; under such circumstances if we could only view the eyes as a component factor of the cerebral and cerebellar mechanism, obscurity in diagnosis would vanish. I have always regarded the eyes as nothing more nor less than prolonged bulbous expansions of the optic nerves with altered anatomic characters to meet the requisites of their physiologic necessity, viz., to formulate and receive impressions of the external world and, carrying the analogy a step further, we find that the optic nerves are but the telegraphic media of conduction extending from the perceptive center or brain and finally terminating in their bulbous expansions, the eyeballs,—so that the eyes may be justly regarded as the terminal filaments of the optic nerves, and we accordingly note that sources of peripheral irritation excite central phenomena; while *per contra*, in the majority of instances the initial pathologic process appears in the brain and travels downward along the nerve or its sheaths, as in descending neuritis arising from cerebral tumor or other central morbid process.

Anatomic data are likewise corroborative of an intimate association of the eyes and the brain, for notwithstanding the attempt to separate the optic nerve fibrillæ into separate and distinct bundles, we find that there is here and there along the nerve a complete fusion, so that it is only possible, according to Uhthoff, to separate the macular bundle as a distinctly central bundle in close proximity to the chiasm. See too, how intimately the optic nerves are connected with the brain. This connection is chiefly a threefold one, for we have a large part entering the external geniculate body, another part the thalami optici and pulvinar, and another the anterior corpora quadrigemina; thence from these so-styled primary optic ganglia, fibers are traceable to the posterior third of the internal capsule midway between the lenticular nucleus and optic thalamus, extending under the name of Gratiolet's optic radiation to the cortex of the occipital lobe, and chiefly to that part of the cortex which is styled the cuneus, terminating, finally, in the ganglion cells of the cortex within a region which has received the appellation of the optical cortical area, or visual sphere of Munk, which in turn is intimately connected by means of bundles of associating fibers with the cortex of the frontal, parietal and temporal lobes of the same side, and we are in a position to infer from the connection of homonymous parts of the cortex of the two sides by means of commissural fibers, the chief of which is the corpus callosum, that an intimate association between the various cortical elements is maintained. Then too, the semi-decussation of the optic nerves seems to have been designed by Nature among her allwise provisions as a means of creating a more intimate relationship between the eyes and the brain.

We note further that the eye undergoes degenerative change when its central connections are divided, and again, ascending atrophic optic nerve changes supervene when destruction of the eyeballs has occurred which, following the experiments of Gudden, I have myself fully verified in experimenting on rabbits, destroying one or both eyes and observing the course of the consequent atrophy. And while such changes are only approximate as applied to man, still opportunity to determine this question post-mortem has been afforded several observers, and their findings are fully in accord with the generally accepted conclusions applicable to nerves. We know that when a nerve is divided in an adult, degeneration ultimately extends as far as the terminal network, implicating those ganglion cells whose axis cylinders extend through the same nerve, and later other groups of ganglion cells become involved as a result of contiguity, extension of some inflammatory process or otherwise,—and here it may be well to emphasize the changes that are consequent upon destruction of both optic nerves, or obliteration of the chiasm; necessarily they are bilateral, *i.e.*, in all cases in which a lesion lies on the central side of the chiasm, the ocular manifestations are symmetrically exhibited in both eyes, while asymmetrical phenomena in both eyes, as well as monocular visual defects, are referable to a lesion in the optic nerves proper, or anteriorly to the chiasm. If the lesion divides the chiasm vertically we have hemianopsia as illustrated by Weir Mitchell's case, cited in the *Journal of Nervous and Mental Disease*, 1889, p. 44, in which an aneurysm had completely divided the chiasm in the median line and caused blindness of both inner retinal halves. With respect to the importance of either one of the three primary optic ganglia in the rôle of the visual act, it is unfortunate that investigators have reached no concordant results, owing to the rarity of clearly defined examples of isolable lesions

implicating one or the other of the primary ganglia, and the fact that we are unable to extend our experimental researches to the human family. Crossed hemianopsia has been known to follow obliteration of a single pulvinar, while destruction of the anterior corpora quadrigemina has ensued without perceptible visual impairment, although I believe Gowers is authority for the statement that choked disk in which blindness was not a conspicuous feature has followed injury of the anterior corpora quadrigemina; however, the general consensus of opinion of investigators is that the anterior corpora quadrigemina preside over movement of the extrinsic ocular muscles, their nuclei being intimately associated with them.

If we consider the comparatively small surface area of the retina, we are surprised to find that the bundles of optic nerve fibrillæ are so numerous, and again, when we consider the minuter and all-important papillo-macular region we note that the most important conducting fibers are here disposed, and as we are justified in assuming that the papillo-macular bundle is formed by an agglomeration of optic nerve fibrillæ, each one of which has an intimate as well as individual connection with the brain, we must conclude that the eyes are simply outlying cerebral structures, so placed as to meet the exigencies of their function, and in cases of sympathetic irritation which in many instances precedes general ophthalmitis, we are able to readily appreciate the rationale thereof, although in accordance with the definitive experimentations of Deutschmann, and conforming to the most recent bacteriologic research, we ascribe the occurrence of sympathetic ophthalmitis to the transmission of germs through the medium of the optic nerve sheaths, rejecting the theory of nerve irritation. After accepting such an intimate association of the eyes and the brain, it would not be unreasonable for us to expect that ophthalmoscopic investigation would at once reveal the cause of cerebral and sequelar ocular changes, but unfortunately such is not the case, for the reason that the cerebral and optic nerve circulation is governed by the amount of blood, not alone in the carotid, but depends upon the entire circulation in the circle of Willis, which in turn depends upon cardiac tone, and while increased or diminished blood pressure in the carotid might excite retinal hyperemia or ischemia, it would be no positive criterion as to the nature or gravity of the pathologic cerebral change. However appropriate the attempt to define a coarse relationship between the eyes and the brain, we are still confronted by the necessity of tracing the distribution of the optic nerve fibrillæ in the brain, or, as it is usually styled, the origin of the optic nerves, in order to explain many of the symptomatic ocular phenomena characteristic of morbid cerebral and cerebellar processes. Unfortunately, we are still unable to assume a positive stand in this direction, and yet that which is positively known in this regard enables us to classify many changes with a reasonable degree of assurance. Thus we know with respect to cortical visual disorders, *i. e.*, those which are situated on the central aspect of the primary optic ganglia, heretofore mentioned in Gratiolet's optic radiation and in the cortical portion of the occipital lobes, that: 1, central disturbances necessarily induce homonymous ocular phenomena; 2, ophthalmoscopic manifestations are absent; 3, involuntary light reaction is present, even if optical memory pictures are not elicited.

We find that destruction of the cuneus in man, induces marked hemiamblyopia in the opposite half of the visual field, or the same effect as the obliteration of the entire cerebral cortex, which proves a uniform distribution of all optic nerve filaments, all theoretical reasoning to the contrary. Schaefer, Munk and others have demonstrated by experimentation upon animals, and clinical data support their findings, that feeble electrical stimulation of the occipital cortex causes conjugate ocular movements to the opposite side, upward when applied posteriorly, downward when applied anteriorly, which indicates that the brain exercises control of voluntary motor ocular movement and presides over orientation, enabling us to ascribe the proper position of an object in the visual field.

Embryology also teaches us that there was primarily a very intimate relationship between the brain and the eye, and that the eye has virtually evolved therefrom, for the eye develops from an invagination from both sides of the primitive cerebral vesicle, which invagination is styled the primitive ocular vesicle, and remains attached by means of a broad pedicle which subsequently contracts and forms the optic nerve. This pedicle is enveloped by the ectoderm which at the apex of the ocular vesicle becomes thickened, constituting the first germ of the lens which ultimately is reduplicated by reason of the more speedy development of the ectoderm and appears as a pouch-like eversion which subsequently closes, forming a sac—the lens vesicle. The retina is likewise derived from the primitive ocular vesicle and is therefore regarded by many as a remote part of the brain, and in accordance with embryologic development we are certainly at liberty to regard the eye as a whole, as a cerebral appendage. Again, when we consider how intimately associated the ocular mechanism and the nervous system, as a whole, appear to be, as fully borne out by the various symptomatic phenomena such as cephalalgia, migraine, vertigo, visual hallucinations, asthenopia, various types of hyperesthesia, scintillating scotoma, reflex phenomena, and very often in cerebral hemorrhage we find transitory homonymous hemianopsia in the visual field of the side opposite to the hemorrhage—we must conclude that the connection between the eyes and the central nervous system is very close. In cases of cerebral hemorrhage too, while occasionally there may be ophthalmoscopic findings due to the hemorrhage, more frequently do we find pathologic changes in the eyes that arise from the same cause as the cerebral hemorrhage. Thus neuritis, albuminuric retinitis and neuro-retinitis are signs of similar brain changes, while retinal and subhyaloid hemorrhages are indications of a general atheromatous tendency.

804 Champlain Building.

LYMPHANGIOMA CAVERNOSUM OF THE ORBIT.

WITH AN ORIGINAL CASE.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY S. C. AYRES, M.D.

CINCINNATI, OHIO.

Mr. C., age 53, was first seen May 15, 1894. At that time there was a well-marked proptosis of the right eye, which he said had been coming on for about three years. He had had no pain in the eye or the orbit. He could count fingers at

3′ but the inner field seemed to be more sensitive than the outer field. There was well marked optic neuritis. Motion of the eye was unimpaired. The diagnosis given was a probable sarcoma beginning in the apex of the orbit.

He has generally enjoyed excellent health and has been an active business man. Family history: his father died at 70 and his mother at 83; one sister living and in good health, and two sisters deceased—one from a malignant growth and one from childbirth. It was impossible to detect any growth around the rim of the orbit and it seemed evident that the growth, whatever it might be, was located in the apex of the orbit and was pressing the eye directly forward.

He was not seen again until Nov. 26, 1894. In the meantime the tumor had grown very considerably, and the proptosis was very marked. The eye now stands about 8 mm. in advance of the plane of the left eye. Motion upward was limited and the eye diverged, as if pushed out in the axis of the orbit. The optic disk was very considerably swollen, and vision was 0.2. Within the past few weeks he has had three severe attacks of pain in the head, lasting several hours each time, and during them he had a tingling sensation in the right side and some delirium. There has also been at times a well marked mental hebetude. He became listless and sleepy, and lost interest in everything around him. When his wife read to him, he would fall asleep or would lose interest in what was read, or in conversation. He has had a large number of nasal polypi removed within the past year, but there was no evidence of any malignant growth in the nasal fossæ. The increasing exophthalmos and the mental hebetude and the attacks of pain in the head made him decide to submit to surgical interference for relief. There is no evidence of any growth in the orbit from palpation nor was there any bruit or pulsation. He was told that an attempt would be made to remove the tumor and save the the globe, if such was found practicable, after its size and character had been sufficiently obtained in the first steps of the operation. The external rectus was first severed, leaving a stump on the sclerotic, so that it could be used for reuniting the muscle, in case the tumor could be removed without sacrificing the eye. After getting an opening sufficiently large for me to make an exploration with my finger, I found that I had to deal with a large elastic tumor, which grew within the muscular funnel. The optic nerve was on its anterior surface and put greatly on the stretch. In view of the injury to all the ocular muscles and optic nerve from an attempt to remove so large a tumor, I decided to enucleate the tumor and globe together. The growth filled the bony walls of the orbit so closely that there was some trouble in detaching it, but this was finally accomplished and the optic nerve severed at the very apex of the orbit.

Macroscopically, the tumor presented a whitish appearance and was firm but elastic. The optic nerve was attached to it by bands of connective tissue. It measured 35 mm. in length; the diameter of the outer end was 22 mm., and that of the inner end 13 mm.

It is now five months since the operation, he has had no pain in the head, and the mental dullness and apathy have entirely disappeared. He takes an active interest in everything around him, and has regained his former mental activity. This has been one of the striking features of the case.

The microscopic examination was made by my friend, Dr. J. E. Greiwe, whose letter I copy:

"*Dear Doctor:*—I have examined the specimen which was removed from the orbital cavity, and I send you a few preparations stained with Boehmer's hemotoxylin. I do not think there can be much doubt about the nature of the growth; and, while one would certainly be justified, from a macroscopic examination of the tumor, in coming upon the suspicion of ecchinococcus, yet there is nothing to justify the diagnosis microscopically. There are no hooklets, no characteristic membrane, etc. The new growth, if you may call it in the strict sense of the word a new growth, is characteristic of lymphangioma. Macroscopically, you will notice that the preparation shows many small cavities. The tumor itself is composed for the most part of lymphoid cells, both large and small; the cavities are for the most part lined with an imperfect layer of endothelium, and within these cavities are numerous lymphoid cells lying about loosely. There are no traces of blood vessels, and there is no evidence of glandular formation. Lymph vessels are numerous and large, and these larger ones are lined with a perfect layer of endothelium. The examination agrees also with the clinical history of the case. I think the trouble originated from an occlusion of one or more lymph channels causing an engorgement, which in the course of so long a time resulted in a mass of this size. My diagnosis is lymphangioma cavernosum. Very sincerely,

(signed) J. E. GREIWE."

The literature at my command shows only two similar tumors and probably a third. The first one is by Förster, in *Graefe's Archiv.*, vol. XXIV, 2, p. 107. The second is by Wiesner, *Graefe's Archiv.*, vol. XXXII, 2, p. 205, and the third by Dunn, *Am. Jour., Med. Sciences*, 1894. There may be other cases of similar character, but I have not access to them. In consideration of the rarity of the disease, I have made translations from the above cases and have added notes from Ziegler and Michel.

In Förster's case the tumor was situated within the funnel of the ocular muscles, as was mine, and was about the same length but broader. In this case, however, there was no mental disturbance and no pain. In mine, the mental hebetude seems to have depended on the influence of the tumor. The tension of the tumor on the optic nerve must have been very considerable, as the nerve was found lying *over its anterior* surface. We can not calculate from other statistics, as they are wanting, the probable or possible influence of such a stretching of the optic nerve on the brain, but in my case they seemed to stand to each as cause and effect.

In Wiesner's case the tumor was located between the globe and the lower outer edge of the orbit, and was ovoid in shape and movable.

In Dunn's case, the patient was a leukemic boy, 8 years of age, and the tumors were above the eyes and attached to the orbital arches, and there was no impairment of motion or vision.

There is an apparent inconsistency in the vision of the eye when examined in May and November. At the first date he could count fingers at only 3′ and in November he had a vision of 0.2. I can only account for the difference by the variation of pressure on the optic nerve.

1. Professor R., *Graefe-Saemisch*, vol. VI, Berlin, page 700, (quoted from Förster, *Arch fur Ophthal.*, XXIV, 2, p. 108.) The only case reported up to date (1875) is reported by Förster: "For the past ten years, Nicholas B. has had a steadily growing protrusion of the eyeball. Status: V.= movements of the hand and one foot. The skin of the lid is red, and the veins varicose. The globe is strongly abducted, and with difficulty pressed backward. Movements of the globe are greatly interfered with, especially upward and inward. Palpation of the inner side of the orbit gives one the sensation of a slightly movable, soft, in places nodular tumor about the size of a nut. Pulsation distinct, auscultation negative. Ophthalmoscopically: white atrophy of the optic nerve with but slightly filled vessels. Clinical diagnosis: sarcoma fibromatosum orbitæ. Enucleation of the globe and tumor. Healed in six days. No recurrence. Macroscopic examination: within the muscular funnel to the inner side and below the globe, was found a soft elastic tumor 37 mm. long and 35 mm. broad, which was inclosed in a capsule. On section the entire tumor showed itself permeated by spaces of various sizes, between which are broad bands of fine connective tissue. Microscopically, the inner walls of the alveoli are lined with endothelial cells. The walls themselves are formed by layers of connective tissue fibers, between which are spindle cells which are arranged

concentrically to these cavernous spaces. The spaces contain numerous lymphoid cells, whereas the fibrillary walls show large quantities of elastic fibers and blood vessels."

The clinical character of this tumor coincides most remarkably with that of a cavernous angioma. The slowness of its growth, its painlessness, its seat within the muscular funnel, the retention of a certain amount of movement in all directions, its soft elastic consistence, which the specimen showed; in short, the only symptom which was lacking and which in this instance was not sought for is the swelling, to have made this a complete picture. *We must, further, not forget the most important fact, that this even in itself rare form of tumor, a cavernous lymphangioma, is found here for the first time in a tissue in which, anatomically, up to the present time, no true lymph vessels have ever been found.*

Owing to this being a single isolated case which up to date has been reported as occurring in the orbit, the writer (Berlin) is prompted to give it thoughtful criticism. This would certainly not be possible if the microscopic examination of the alveolar contents had given us a completely convincing result. But he simply states: "The areolar spaces contained numerous lymph corpuscles." It certainly would have been of great importance to know whether there had been any other morphologic elements present. The fact, as the author states, that the specimen was preserved for one and one-half years in Müller's fluid and alcohol before the microscopic examination was made, might certainly give us a reason for the difficulty in recognizing red blood corpuscles. The course seems to be an exceedingly slow one. Prognosis as regards the general condition is good. As a rule, as a result of pressure on the optic nerve or on the globe, or both, it leads to atrophy even destruction of the globe. Therapy: extirpation.

2. Ziegler's "Pathology," vol. II, page 304. Published 1891: "The angiolymphaticum, or the lymphangioma, bears to the lymph system exactly the same relation, that the angiom does to the vascular system. It consists principally of a dilatation of lymph vessels, which is at times associated with a hypertrophy of the lymph vessel walls and the tissue between them. It is possible to differentiate between a lymphangioma simplex or telengiectasia lymphatica, and a lymphangioma cavernosum. We must still mention a third form, the lymphangioma cystoides. As one may see from the nomenclature, the configuration and size of these dilated lymph vessels varies greatly. In the most pronounced change, veritable cysts are formed. The contents of these spaces is mostly a light and clear, exceptionally a milky lymph. The condition is partially congenital, partially acquired. The congenital lymphectasies are found in various forms, as in the tongue, (macroglossie), the dental arches, the lips (makrocheilie) in the skin (nævus lymphaticus), on the neck (hyroma colli congenitum) the labia majora, etc. It is not unfrequent to find the lymphectasie in the skin as an acquired condition, for example, on the thigh and on the scrotum. At times they form extensive, circumscribed, fluctuating tumors, (Fig. 157). The ectatic and cavernous lymph vessels show thickened walls, and have their seat more especially in connective tissue and fatty tissue, owing to extension of this cavernous development of lymph vessels over a large surface of the subcutaneous tissue of the skin, and may cause an elephantiasis-like disfigurement of the part. Not infrequently the tissues which lie between this growth also undergo a hypertrophy. If these cutaneous lymphangioma burst, a lymphorrhea ensues. Not infrequently we find hyperplasia of the skin and other organs complicated by the ectasie of the lymph vessels of the skin. In very exceptional cases, chylangiome of the intestinal wall and the mesentery have been found, and exceedingly seldom, cystic lymphangiome of the peritoneum."

3. Michel, *Augenheilkind*, 1890, page 649: "Cavernous angioma and lymphangioma may occur primarily in the orbit. They are most frequently found in the muscular funnel; less frequently between the latter and the bony wall. The latter is the case when the tumor has extended by growth, and this most frequently extends toward the roof of the orbit. The lymphangioma, it may further be stated, occurs in the latter years of life (about the fortieth year) and may then occur primarily between the muscular funnel and the edge of the orbit. The symptoms at first may be very slight, simply causing a slight impediment to free movement, thus leading to diplopia. As the tumor grows, the eye is pushed forward. The surface of the tumor as a rule is smooth, sharply defined, movable and compressible. Anatomically, the tumor is made up of connective tissue; the alveoli are lined with endothelial cells; contents, a serous fluid containing lymphoid cells. *Lymphome have been observed in the orbit at the same time with others in the lid, in leukemia.*" (See page 11.)

4. Thos. J. Dunn, case of leukemia with rare lymphoid growth of orbits and parotid gland. The *American Journal of Medical Sciences*, 1894: "Boy 8 years, highly leukemic. Growths in the orbits were crescentic above the eyes and not firmly connected with the lids beyond the nasal side of orbits and extended to the external canthus, and were firmly attached to the orbital arches. Not painful. Considerable exophthalmus. Motions of eyes not much interfered with. Eyes healthy otherwise. Vision normal. No autopsy allowed."

5. B. Weisner, "The Lymphangioma of the Eye," *Graef. Arch.*, vol. XXXII, B. 2, page 208. Case seen in November, 1885. History: patient 43 years old. Tumor of lower lid. Since past two months, diplopia. Status: weak hypermetropia. Complete loss of function of right rectus inferior. Between globe and lower outer edge of the orbit is an ovoid movable tumor, about the size of a hazelnut; hard consistence, smooth surface. No exophthalmus. Diagnosis: fibroma of the orbit in tissue between the peri-orbital and rectus muscle. Operated one week later, November 13. Incision made parallel to the lower orbital edge just below the same, and the tumor, which was loosely connected with the peri-orbita and muscular funnel, was easily peeled out without loss of blood. Healed by first intention. Patient discharged on fourth day. (*a*), macroscopic examination: tumor 77 mm. long, 9 mm. high, 5 mm. thick. On incision a serous fluid escaped. Tumor showed a cavernous structure with relatively large and some smaller spaces, showing a striking likeness to the cavernous structure of the corpus cavernosum of the penis. Tumor was covered with a thin fibrous sheath. (*b*), microscopic examination: made partially on teased preparation, partly on sections stained with hemotoxylin. The lax tissue around the tumor is concentrically arranged, rich in fat and blood vessels, whose

walls are hypertrophied. The fat is infiltrated with lymphoid cells. Accordingly the tumor is to be designated as a cavernous lymphangioma of the orbit. He then quotes Förster's case. The mode of development of these tumors. They must belong to the class of new formations which take their origin from embryonal tissue. This follows from some unknown cause.

We must assume, in the foregoing cases, that in the orbital tissue at some point, the development starts from (the lymph vessels have not as yet been demonstrated) the germ of the mesoderm or embryonal formative cells. In such a new growth all such tissues may be found which are destined to be developed from the mesoderm. That in any special case any particular type should predominate is not to be wondered at. In one case it assumed the character of a cavernous lymphangioma, which is rich in connective tissue, has many hollow spaces filled with lymphoid cells. The formation of blood vessels keeps pace with the formation of connective tissue, which they nourish. In a later stage muscular fibers develop. The formative material, however, has been present from the beginning, consisting undoubtedly of a portion of the spindle cells interspersed in between the connective tissue framework. The arrangement of the muscular fibers is so far regular, in that they arrange themselves in bundles; otherwise, they follow no regular type. The pressure which results from the growth of the tumor explains the inflamed condition of the vessels of the fibrous capsule, which appear to have developed from the cellular tissue of the orbit. The inflamed condition of the capsule is demonstrated by the hypertrophied condition of its capsule. The hollow spaces within the tumor are of very irregular form. This is the result of the outgrowth of processes, which meeting each other from opposite sides lead to the formation of new spaces, and this going on will gradually lead to increase of the tumor.

This tumor must be differentiated from the cavernous angioma, and in so doing I must confine myself to a clinical differential diagnosis.

The cavernous lymphangioma has no characteristic clinical picture, so that we can show but indirectly by the clinical history that they are not cavernous angioma. Based on a case of v. Graefe (*Graefe-Saemisch*, vol. VI, p. 708) Berlin describes the principal clinical features of the cavernous angioma: "The spontaneous increase and diminution of the swelling, which can also be induced mechanically. Its full, elastic, but at no point hard consistence, the almost totally intact muscular movements, its seat in fatty tissue, its extremely slow development, its painlessness and lastly the otherwise good condition of the patient."

Not a single one of the symptoms was present in this case (as also in Förster's case). The increase and diminution of the swelling was entirely wanting. Förster's case showed exophthalmus, nor was the consistence like that described by v. Graefe. It was hard, which could not be the case in a tumor that was changing its size and elastic. Still it was very difficult to form a correct idea as to the consistence of a tumor, especially when palpating a tumor in the orbit. Then again, there was not in our case a totally intact muscular condition, for we found impairment of the external rectus. In Förster's case, in which the tumor was inside the muscular funnel, the movement was interfered with in all directions. If this last symptom were always found lacking in cavernous angiome, and in both the other cases was found present, this could be explained by the different anatomic character of the tumors. For the angiome is compressible; hence, any interference with muscular movements can be easily overcome, whereas in the lymphangiome this can not occur, hence the interference with the muscular action. The seat of the disease, the painlessness and general condition of the patient are general symptoms and do not enter into the differential diagnosis.

The other objection which Berlin makes to Förster's case, I do not consider as proved. The fact that this is an isolated case simply goes to prove that it is a rare affection and it is possible that some of the cases which have been described as fibroma of the orbit were of this nature. It seems strange that Berlin is not satisfied with the statement that "the spaces were filled with lymphoid cells and contained no other morphologic elements," and again his remarks about the preserving value of Müller's fluid. Examination of specimens which had been preserved for many years in Müller's fluid demonstrated the fact that it does preserve the red blood corpuscles beautifully.

Berlin seems to be of opinion that lymphangioma can only occur where lymph vessels are present. I here once more point to the mode of development of these tumors, and will further add Wegner's theory. (*Langenbeck Arch.* XX.) Wegner arrives at the following conclusions:

1. Lymphangioma may develop from already existing lymph vessels, which become dilated as a result of stasis, owing to closure of larger lymph vessels; hence, as a result of ectasie with hyperplasia. A case of this kind of so-called capillary lymphangioma has been described by Ben. Israel (*Uber Lymphangioma Mag Dis Würzburg*, 1885).

2. A second mode of development is not from pre-existing lymph vessels, but from newly formed lymph vessels, which are the result of an active proliferation of endothelium which already exists—homoplastic neoplasm.

3. A third form is mentioned by Wegner, in which there is also a new formation of lymph vessels, which develop from connective tissue, granulation tissue, which is the result of the dilatation of spaces gradually taking on the character of lymph-carrying spaces—heteroplastic neoplasm.

14 E. 7th Street.

ECTOPIA LENTIS.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY FLAVEL B. TIFFANY, M.D.

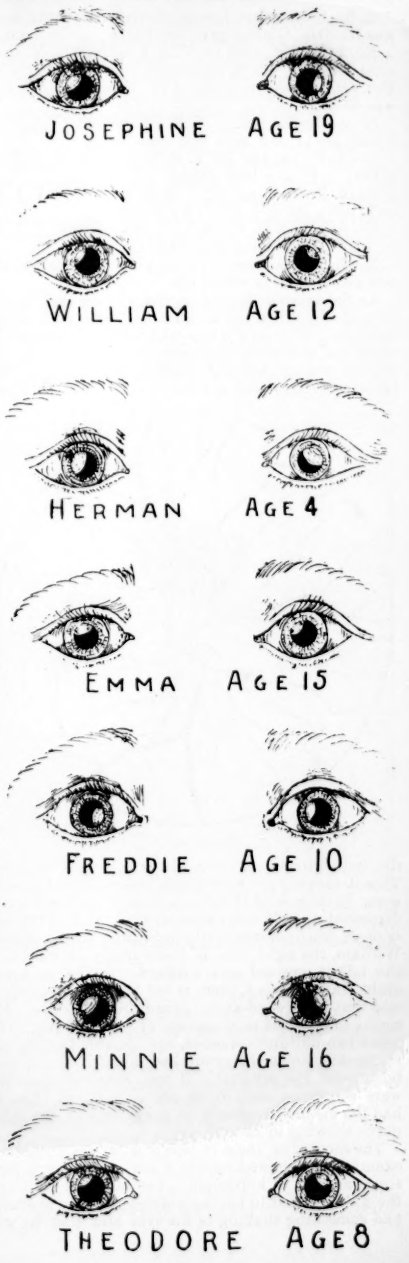
KANSAS CITY, MO.

In speaking of the subject of ectopia lentis before this body of oculists, it is not my purpose to review the literature upon the subject nor to discuss in particular the symptoms or treatment. Each and every one of you doubtless has met with the various forms of ectopia lentis—spontaneous, traumatic and congenital. In my practice within the last twenty years I have seen almost every form of luxation of the crystalline lens. I have seen the lens as it were a drop of oil in the anterior chamber; I have seen it extruded through the sclera lying beneath the conjunctiva; I

have also seen it entirely expelled from the eye through the cornea. Only a few days ago when attempting to evert the lid of a baby with ophthalmia neonatorum, the lens popped out on the cheek through the ulcerated staphylomatous cornea. I have found the lens partially dislocated from its bed, swinging backward and forward like a shutter on its hinges. Quite frequently have I found it luxated into the vitreous and floating there. I remember one case in particular, where the lens had been broken and thrust into the anterior chamber by an osage orange thorn; and the attending surgeon was about to remove the eye, mistaking the comminuted lens in the chamber for panophthalmitis.

I call to mind several cases of luxation of the lens into the anterior chamber, which for want of proper diagnosis and timely treatment had provoked suppurative iritis and glaucoma. Several cases I have had of so-called spontaneous luxation into the vitreous, but invariably they were in myopic eyes or cases of synchisis; but all these you have also had; and it is not of them I wish to speak. I want to call your attention especially, gentlemen, to two cases which are in my opinion rare or unique. The first is that of traumatic luxation of both lenses at one and the same time in an individual whom I saw at Edgar Brown's clinic at Liverpool, Eng., September, 1887. The patient was a woman of middle age. On each eye the lens was seen resting upon the sclera beneath the conjunctiva a few mm. from the inner and upper border of the limbus. There was a rupture of the sclera about 8 mm. long between the superior and internal rectus, parallel with the limbus, and some 3 or 4 mm. from the sclero-corneal junction. The injury was caused by a clutch of the fist during an altercation between the woman and her son-in-law. I speak of this as a most rare accident, both eyes having been identically and simultaneously injured. But it is to my second case I especially call your attention. This case is that of congenital ectopia lentis in a family of nine children, the Vogle family of Leavenworth, Kan., seven of whom were thus afflicted, while the other two had not the slightest displacement of the lens. In each of the seven, the lens of each eye was displaced in some direction from one-third to one-half or more of its width. With the pupils dilated, one could readily view the fundus of the eye, either through or at one side of the lens. With the indirect method, two images of the fundus could be seen at one and the same time. The lenses all seemed slightly opaque, and the edges were all dark, appearing as a black curved line dividing the pupil; this line probably was due to the total reflection and not to opacity. In each case there was iridodonesis and the lens could be seen swaying slightly to and fro. None of the children complained of or admitted of having monocular diplopia.

Of the seven afflicted, there were three girls and four boys, ranging from 4 to 19 years. I made a careful examination of both eyes of each child, taking the vision with and without glasses, making a drawing of each eye, illustrating the direction of the luxation and amount. I have had a half tone made of these drawings which I hand you. They will show better than words can tell, the appearance of each case examined. In most of the cases you will notice that the displacement is outward, in some slightly upward and outward, in one alone the lens of both eyes is displaced toward the nasal side.



In No. 1, the oldest, Josephine, vision without glasses was 20-200. Glasses gave but little improvement.

No. 2, Minnie, aged 16, V. R. E.=20-200. V. L. E. =20-200 with + 3.50 vision was increased to 20-60. For reading she required +12. Pupillary distance was 60 mm.

No. 3, Emma, age 15, V. R. E. = 5-200; V. L. E.= 8-200; +11 D.s. gave best vision.

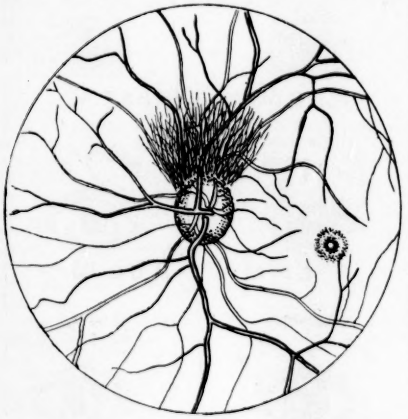
No. 4, Willie, age 12, V. R. E.=8-160; V. L. E.= 6-160; +11 gave best vision.

No. 5, Freddie, age 10, V. R. E.= 12-160; V. L. E. =12-160; Gave + 13, P. D., 60 mm.

No. 6, Theodore, age 8, V. R. E.=3-200; V. L. E. =3-200; + 11 gave best results.

No. 7, Herman, age 4, vision as near as I could tell was about 8-200 of either eye.

As the diagram indicates, you will see that in the case of Josephine, the lenses were displaced horizontally outward. In the case of Emma, the lens of the right eye was vertically upward, while that of the left eye was upward and inward. In Theodore, both lenses were displaced upward and outward. In Fred-



Louisa, age 18.

die, both lenses were shoved inward, toward the nose. This is the only one with displacement inward of both eyes. In the case of Minnie, the lens of the right eye is displaced upward and outward, while that of the left is more nearly horizontally outward. In the case of William, the right lens is horizontally outward and the left is upward and outward. In the youngest child Herman, age 4, there is but slight displacement and that is outward and upward in either eye. He seems to have the least amount of vision of any. The other two children—Louisa, age 18, and Bertha, age 6, who are not in the group had 20-20 of either eye, but under the mydriatic it was revealed that they were hyperopic each to the amount of 3 D. Louisa had the medullary sheath or gray fibers of the optic nerve showing in the left eye.

The mother of these children is 40 years old, and examination showed nearly a normal eye or a very slight amount of hyperopia. The father is dead, but the wife testified to having noticed that her husband had something shaking in his eyes and that he was very near-sighted. He was a tailor and worked constantly at the bench up to his death without glasses. The shaking in the eye she noticed was probably a tremulous iris and from this fact and that he was myopic we may naturally conclude that he was afflicted with ectopia lentis. The father was Swiss and the mother German and they were no blood relation.

Now the question that interests me especially, in this group, is the etiology, and also why seven out of nine should inherit the anomaly and two should go free, and why all but one should have the displacement outward. You may say that it is due to an arrest of development; then we naturally inquire of what part of the eye; not of the lens, for certainly in these cases the lenses were of the natural size and shape. If you say that coloboma of the iris or of the retina is due to an arrest of development, or that cleft palate or bifurcated uvula are due to an incomplete union, I can more easily understand that; they being at the median line. It seems to me that these cases are of special interest from an etiologic standpoint and again from the fact that so large a number of the same family are afflicted. And were we to explain the etiology, what may we say of the distinction why were most of these children doomed while two escaped?

TREATMENT.

In the primary infinitesimal amount of protoplasm from which the body is evolved, there are inherent all the potential elements that may go to form the perfect being in all its minutiæ; but if these potential elements are vitiated by abuse, by profligacy, by dissipation, by debauchery, or by excesses and intemperance in any direction the impress in some way is most sure to be visited on the prenatal child. These freaks and anomalies are, then, the direct consequences of the violation in some way of the great laws of nature and whereas it is not in our power to reintegrate the present, we should ever be on the alert by judicious and timely advice, to exert our influence in protecting future generations against vitiated inheritancy, that they may not be dwarfed or crippled in their physical or mental development.

1235 Grand Avenue.

ENCHONDROMA OF THE CARTILAGE, UPPER LID.

Read in the Section on Ophthalmology, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY PETER D. KEYSER, M.D.

PHILADELPHIA, PA.

In 1888 Mrs. P., age 58, presented herself at my clinic at the Wills Eye Hospital with a round lump in the upper lid, which she said had been slowly growing for a year or two. No inflammation connected therewith. It was hard, solid and firmly attached to the cartilage. An incision was made along the lid over the tumor and the convexity of the latter shaved off. This was firm, cartilaginous, cutting crisply and of a yellowish white appearance. It had all the appearance of a thickened cartilage. No microscopic examination was made of the part removed.

In 1890 she came back with a much larger return of the growth. It was again operated on as in the former method. No examination made. In 1892 it had grown again and more nodular. My purpose now was to try to remove all of the diseased cartilage, leaving if possible the conjunctiva, so as to protect

the cornea. To do this the edge of the lid was carefully slit up, and as much as could be of the cartilage down to the conjunctiva removed. This seemed to do very well for awhile, but after six or eight months it began to develop again quite rapidly, growing along the whole cartilage, taking upon itself a well developed nodular form, and with a small open sore on the edge of the lid, the whole having the appearance as in the accompanying figure.

Operative influence was again necessary to remove the unsightly looking lid and to relieve distress; so, on Sept. 11, 1894, the edge of the lid was carefully slit and the skin dissected up so as to expose the whole growth. The whole cartilage of the nodule on the nasal side was removed with the conjunctiva, while that of the temporal side was dissected out as much as possible, leaving the conjunctiva.

After the operation Dr. Currie, chief resident surgeon and acting curator of the hospital preserved what was removed, for preparation and microscopic examination. After some time he presented me with some carefully prepared slides and called my attention to a number of cells such as are exhibited in enchondroma. After very careful examination it was decided that the growth was enchondromatous formation, and as it was a simple outgrowth from the normal cartilage, might come under Virchow's term of ecchondroses.

Figure 1.

Dr. Clarence P. Franklin was kind enough to make a drawing of the eye just previous to the operation (Fig. 1) and also to make the accompanying sketches from the slides under the microscope, showing the fibrous and cartilaginous nature of the specimen. There were well developed walls with the cartilaginous cells lying therein, some separated, while in others they are packed closely together. There is also glandular tissue. See accompanying drawings.

The character of growth in this place seemed somewhat strange and to me new, and search has been made in all the works on ophthalmology in my library to find if such a growth in that part has been noted. An examination of all the text-books on ophthalmology published in English, German and French, so far has failed to find any report of such a growth except in Fuchs. In the chapter on the tumors of the lids he writes: "In consideration of the complicated structure of the lid, in which such a manifold variety of tissues take part, it should not surprise us that the most dissimilar kinds of tissue should at times come under observation. As rare occurrences there have been observed fibromata, enchondromata, etc., of the sebaceous glands (including Meibomian glands and the glands of Krause) of the sweat glands and the glands of Moll."

Figure 2.

Search has been made in all of the German, French and English ophthalmological journals from their beginning, and no case found reported. The *Jahres Bericht*, "*uber die leistungen und fortschritte im Gebiete der Ophthalmologie* of Nagel, and the *Index Medicus* have been looked through and no case reported.

Fuchs is the only one so far found, calling attention to the fact of such a growth taking place on the lid. I present the case as one of very rare occurrence.

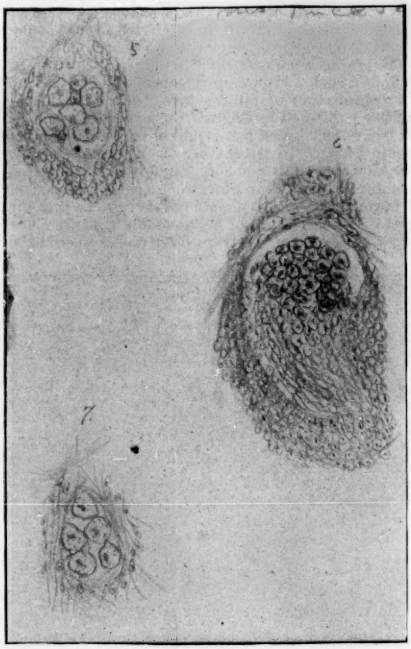


Figure 3.

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NOTE.—Dr. de Schweinitz writes me that the following in his text-book escaped my notice: "Rare forms of benign tumors are adenoma of the sweat glands and their follicles, papilloma of the ciliary border and enchondroma of the tarsus." He also says, that his information on the subject was derived from Fuchs, who appears to be the only one reporting such a case, and Panas also refers to the same, evidently derived from Fuchs."

FORMALIN AS A PRESERVATIVE AGENT FOR EYE SPECIMENS.

Read in the Section on Ophthalmology at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7–10, 1895.

BY WILLIAM H. WILDER, M.D.

CHICAGO.

The use of some of the older hardening and preservative agents especially for eye specimens is accompanied with certain disadvantages.

Chromic acid and its salts, as used in Müller's fluid, although eminently satisfactory for hardening certain specimens, such as those containing nerve tissue, so discolors them that beautiful macroscopic preparations are difficult to obtain from its use. Alcohol and methyl-alcohol, although not discoloring the tissues of the eye, are open to the objection of making the cornea opaque, abstracting the color from the iris, blood vessels, etc., and what is more serious, unless cautiously used, of causing such contraction of the tissues as to almost spoil some delicate specimens. Again, Müller's fluid and the alcohols require a considerable time to completely harden the tissues of the eyeball so that it can be satisfactorily mounted. These objections do not pertain to formalin, which is one of the most valuable preservative agents we have.

Formal or formalin is an aqueous solution of formaldehyde; the latter in its original state being a gas resulting from the oxidation of methyl-alcohol. As obtained in the market this solution is a colorless, neutral liquid with a specific gravity of 1.080 to 1.088, having a pungent penetrating odor and containing 40 per cent. of formaldehyde. It is miscible in all proportions with water, so that solutions of different strengths can be readily made.

The specimens exhibited here were hardened in a 5 per cent. solution, made by using one part of formalin (Schering) and eight parts of water.

This strength has seemed to me the most useful, although a weaker solution may be used also with success. Hermann, of Erlangen, (*Anatom. Anzeiger*, Dec. 11, 1893) found that he could completely harden an organ as large as a calf's heart in a 1 per cent. solution in twenty-four hours.

N. W. Alleger, of Washington (*American Monthly Mic. J.* 1894, xv) is reported as preferring a 10 per cent. solution as a hardening agent. It seemed to me that some of my specimens hardened in a solution as strong as this, did not preserve the natural colors (particularly the blood in the vessels) as did those in the weaker solution.

The method of procedure is, in brief, as follows: after washing the blood from the enucleated eye with ordinary water, it is placed at once in a bottle containing two or three ounces of the 5 per cent. solution, where it remains for a few days. It will then be found hard enough to bisect. In case the eyeball is filled with a tumor or a mass of exudate, it can be cut with a thin razor almost as easily as one would cut an apple; but if the vitreous is present either in the normal or fluid condition it is best to freeze it, so that in cutting, the relation of the delicate internal structures may not be disturbed and the lens dislocated.

The part that is to be preserved entire, after thawing in tepid water, if it has been previously frozen, is then placed for twenty-four hours in a $33\frac{1}{3}$ per cent. solution of glycerin and water, and then for an equal length of time in a 50 per cent. glycerin water solution. It is then ready for mounting in glycerin jelly after the method of Priestley Smith described in the *Ophthalmic Review*, 1884.

This glycerin jelly begins to soften at about 120 degrees Fah., but the formalin may be again used to solidify the gelatin and to make the preparation permanent. Before capping and hermetically sealing the cells, they may be placed under a bell jar with a little cup containing a small quantity of the formalin. The vapor of formaldehyde that is given off, fixes or hardens the jelly so that it can not be softened by boiling in water or even a soda solution. I commonly leave my specimens exposed to this vapor for about twenty-four hours, and then seal by cementing on the cover.

Hauser, of Erlangen (*London Therapist*, Aug. 15 and Sept. 15, 1893), makes use of the formalin vapor

for solidifying the gelatin on which colonies of bacteria are growing, thus making permanent preparations of cultures for demonstration.

It will be seen in the specimens that the cornea and lens retain almost their normal transparency; at least enough to enable one to note the color of the iris and the whitish pupillary reflex present in glioma. The injection of the ciliary vessels is also well demonstrated in some specimens, while the retinal vessels may be fairly well traced even to small branches. The tissues preserve their natural color and are not shrunken. The retina retains its position better than after hardening with alcohol or Müller's fluid, although in some preparations it will be seen slightly wrinkled.

For microscopic work it presents little or no advantage. Specimens that are to be embedded in celloidin must go through alcohol after leaving the formalin solution, but the appearance of the cell structures shows that the formalin acts as an excellent fixing agent.

Marcus (*Neurolog. Centralbl.*, 1895, XIV, 4) recommends highly the use of formalin for hardening specimens of the central nervous system, and claims that the results he obtained with the Weigert-Pal method of staining nervous tissue hardened in this way were much superior to those of the old methods. Whatever its value as an antiseptic or therapeutic agent, it must be conceded that as a medium for preserving and hardening anatomic and pathologic specimens it has not its equal.

103 State Street.

SOME POINTS REGARDING THE ETIOLOGY AND TREATMENT OF POST-NASAL CATARRH, WITH REMARKS ON THE HYGIENE OF THE RESPIRATORY ORGANS.

Read in the Section on Laryngology and Otology at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY W. FREUDENTHAL, M.D.

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NEW YORK.

There exists for whole nations as well as for the single individual, health and disease, life and death. Both are never in perfectly normal conditions of their organic being; in both, out of *small* and *persistent* working noxious influences, lasting dispositions and stationary diseases are developed, which affect here single organs or systems and there a great many or the majority of a nation.

And just as certain as deeper causes finally influence the whole body of the individual, making him a sickly type, so the noxious agents affecting a whole people can stamp upon it a more or less distinguishable type of peculiarity and susceptibility to sickness or infirmity. (Geigel.)

There are some noxious causes which the writer believes prevail more in this country than elsewhere. The disease, which we shall discuss in this paper, is post-nasal catarrh with all its sequelæ. This disease is so frequent in this country that when European authors speak of American catarrh, they mean this affection. In this country it is usually spoken of simply as catarrh. Now it is the intention of this paper to show that post-nasal catarrh is not such a simple thing as is often believed, and that its causes and effects are to be sought in conditions in which we did not look for them before.

The naso-pharynx is a cul-de-sac between the nose and the pharynx, and this situation alone ought to be sufficient proof that it belongs to or is a part of the respiratory, as well as of the alimentary tract. Not only because its mucous membrane is lined with columnar ciliated epithelium as the whole respiratory tract, does it belong to this part, but also, *and this is the most important reason*, because it impregnates—I do not say saturates—the inspired air with humidity.

That "in the ordinary process of deglutition," as Bosworth says, "it is absolutely necessary that the lower pharynx should be thoroughly lubricated by mucus, in order that the bolus of food shall pass over it without hindrance," and that this mucus comes from the glands of the vault of the pharynx, is, I think, generally accepted.

But these glands have in my opinion, another task to fulfill. Just as it is difficult to get a bolus down into the esophagus and stomach, when it is not lubricated, just the same difficulty is experienced by inhaling air into the lungs that had not been previously moistened in the upper air passages. This moistening process is to a great extent accomplished in the naso-pharynx. Yes, I am inclined to assert that the major part of this process takes place in that portion of the respiratory tract.

I formed this opinion after repeating the experiments made by Aschenbrandt.[1] Already in 1886, Aschenbrandt showed the importance which the nose played in warming as well as moistening the inhaled air. As these experiments are of importance for our further investigations, I will mention them briefly here.

Aschenbrandt took a U-shaped glass tube which he partly filled with pumice stone and sulphuric acid. (See Fig. 1.) This tube he connected on one side with a straight tube, r^1, which he placed air-tight in one nostril. The other end of the tube was connected by means of rubber tubing with a glass jar.

This jar contained 5 liters of water and was arranged so that in thirty seconds the entire water could flow out. Now if we open the clamp at h, the water flows out and 5 liters of air will be drawn in through the nose in the following manner: through—we will say—the right nostril into the naso-pharynx, into the left nostril, and from there through the glass tube T, to the U-tube, and into the big jar.

In the nose and naso-pharynx the air is saturated with moisture, which again is absorbed by the pumice stone and the sulphuric acid in the U-tube, a fact of which we can convince ourselves by touching this glass, which gets warm as soon as the air circulates through it. The big jar containing 5 liters=5,000 ccm., is emptied in thirty seconds, *i. e.*, corresponding to ten respirations of 500 ccm. each.

In making this experiment it is better to put a second glass tube r into the other open nostril, in order to prevent the strong current of air from closing the nostril. Now if we first let the air alone pass through the U-tube and weigh it, and then connect the apparatus with the nose and weigh it again, we can easily determine to what degree the air is saturated with moisture each time.

Aschenbrandt and later my friend Richard Kayser,[2]

[1] Die Bedeutung der Nase für die Athmung. Würzburg, 1886.

[2] Die Bedeutung der Nase, etc., für die Respiration. Pflüger's Archiv., 1887, page 127, and ibidem, 1890.

of Breslau, claimed on the ground of these experiments that the air becomes thoroughly saturated with moisture in the nose, while E. Bloch,[3] of Freiburg, asserts that the saturation is not complete. I have made a great many experiments in the chemic laboratory of Dr. H. Schweitzer and came to the conclusion that neither is right, but that the truth lies between the two.

It seems to me that in even apparently normal noses the ability of the mucous glands to give off moisture to the atmosphere varies in different persons and at different times. In the majority of cases, my results corresponded very closely or were similar to those of Aschenbrandt and Kayser, while, on the other hand, there were quite a number of apparently just as normal noses, where the gain in weight gave evidence that the inspired air was surely not fully saturated with humidity.

A few examples may serve as illustrations: Dr. L., assistant in the laboratory of Dr. Schweitzer, has, as far as I could see by an examination in the laboratory, a normal nose. The U-tube weighed before the experiment, 26.4907 grams; after 5 liters of air had passed through the nose, the tube weighed 26.6115 grams, showing an increase of weight of .1219 grams.

This volume of air passed through in thirty seconds. In one minute we would have:

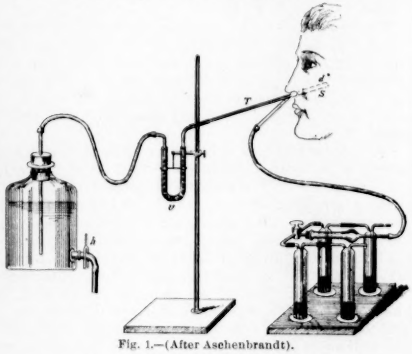

Fig. 1.—(After Aschenbrandt).

	0.1219
	x 2
	0.2438
In an hour	x 60
	14.6280
In twenty-four hours	x 24
	351.0720

The relative humidity of the air was 48 per cent., and the sum of 351 grams per day would not be in favor of Aschenbrandt's theory; while the next case of a 15-year-old office boy, also with a normal nose, gave the following results:

The tube before the experiment weighed 26.6428 after the experiment it weighed 26.8028 grams. Therefore increase in thirty seconds, .1600 grams. Therefore increase in twenty-four hours, 460.8 grams.

The temperature of the room was 68 degrees F., and the relative humidity 48 per cent. If I add the humidity which the air gives off in the rubber tube, we would have approximately 500 grams per day, or about the amount necessary to a perfect saturation. These are a few examples taken from a large number of cases that I have experimented upon, but they suffice to illustrate the results.

I will now add my modifications, which are twofold: first, I examined a number (although not a large one) of pathologic cases, which to my knowledge has not been done heretofore. In almost all of these cases I found a diminution of the moisture for the inhaled air, but I will say that here is a large field for further investigations. I shall limit myself to a few examples only:

Case 1.—H. S., was galvano-cauterized in his nose repeatedly and is well since. Temperature of the room 69 degrees F., relative humidity, 43 per cent. The U-tube before the experiment weighed 26.455 grams; after the experiment it weighed 26.513 grams. Increase in weight in thirty seconds only, .058 grams; increase in weight in 24 hours, 167.04 grams.

We observe at once the immense difference in this man, who had been cauterized about four years ago. The mucous membrane in his nose was so destroyed that during one day he gave off only 167 grams of water instead of 500 grams.

Case 2.—Dr. S. S., has been suffering from hay fever for eight years, but last year he was in Germany and was free from it. Temperature of the room 69 degrees F., humidity 48 per cent. Weight of the U-tube before the experiment, 27.0055 grams; after the experiment, 27.1095. Increase in

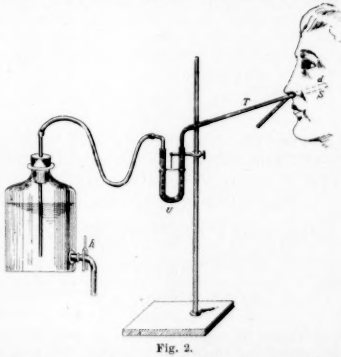

Fig. 2.

thirty seconds, .1040 grams; increase in twenty-four hours, 299.52 grams.

Case 3.—Office boy with large adenoid vegetations. The temperature of the room and relative humidity the same as above. U-tube before the experiment, 26.435 grams; after the experiment, 26.455 grams. Increase in thirty seconds, 0.20 grams; increase in twenty-four hours, 57.6 grams.

This boy, therefore only gave off about one-ninth part of the normal amount, *i. e.*, 57.6 grams per day instead of 500. I must state, however, that the obstruction in his retro-pharynx was so great that the air could be drawn through the nose only very slowly, and that at the end of thirty seconds only 2 liters of water had flown out of the jar, instead of the usual 5 liters. The lymphoid tissue was removed, and a few weeks later the experiment repeated. The numbers were quite different.

The weight of the U-tube before the experiment was 23.1170 grams; the weight after the experiment, 23.2570 grams. Therefore the increase in thirty seconds was .1400 grams; the increase in twenty-four hours, 342.72 grams.

The reason why we did not now get the full amount

[3] Untersuchungen zur Physiologie der Nasenathmung. Ztschr. f. Ohrenheilkunde, 1888, page 215.

of about 500 grams per day, lies in the fact that very likely the glands in the retro-pharnyx had not as yet regained their physiologic secretory power.

I could not get a patient with rhinitis sicca to come down town as far as Front Street, where the experiments in the laboratory of Dr. Schweitzer had been made, but from the first case of H. S., whose nasal mucosa had undergone partial destruction, we can imagine the result in this disease. To get very exact numbers I have used in the beginning two U-tubes, which were connected with each other. But this increase in weight of the second tube after 5 liters of air had passed it, varied only from .0003 to .001 grams. I therefore did not consider it of much importance and used only one U-tube afterward.

Another series of experiments which I made, consisted in letting *absolutely dry air* pass through the nose. For this purpose, I connected the one nostril as before with the U-tube and the jar of water, and the other nostril with Liebig's apparatus, as shown in Fig. 2. This apparatus makes the air perfectly dry and free from carbonic acid. The results obtained by this method showed the increase in weight of the U-tube to be almost identical with the former ones, consequently the nose gave off in these experiments much more humidity than in the former. In other words: the nose had not only to bring up this absolutely dry air to the humidity of the air of the room (43–60 per cent. relative humidity) which was used in the former experiments, but, in addition, it saturated the air with humidity to the same extent as when the air of the room was used. The giving off of water therefore from the nose was much greater. The bearing of this condition in relation to our subject will be discussed later on.

As interesting as all these experiments were, so much did the idea strike me that they were only, to a certain degree, applicable to the physiologic respiration of the healthy man. First, the air that we inhale, passes through only one nostril. Therefore, if the volume of air be driven through both nostrils, it must gain a proportionate quantity of moisture from going over a larger surface of the respiratory tract. Consequently, a part of the moisture gained by driving the air through both nostrils must be deducted in our experiments; hence the Aschenbrandt-Kayser theory that the air in passing through the nose is saturated completely with moisture is not perfectly correct. Another reason for this is, that the air is never driven or sucked through the nose with such force as in our experiments. In the normal quiet respiration the air goes through the nose, only slightly touching the septum and the turbinated bodies and thus striking the wall of the retro-pharynx, creates a whirling motion which brings the different particles of air repeatedly in contact with the mucosa. This causes a longer delay of the air in the retro-pharynx than in any other part of the upper air passages, and in consequence thereof we must expect that the glands here have more chance to give off moisture than elsewhere in the upper respiratory tract. Another fact in favor of my theory is the boy with the hypertrophied lymphoid tissue at the vault of his pharynx. At the first experiment the air had to remain a long time in the nostrils, on account of the obstruction in the retro-pharynx. But, nevertheless, the air that passed through was by no means saturated with humidity. The gain in weight of the U-tube was, on the contrary, so small that a saturation of the air could not be spoken of. After the removal of the lymphoid tissue, when the air could freely pass through the retro-pharynx, the gain in humidity was so much that it almost reached the normal condition. Thus we have to attribute a great deal of the work done in saturating the air to the retro-pharynx.

Now what are the reasons that prevent the retro-pharynx from performing this function? Of the many reasons which might come into consideration, allow me to discuss only two, which I consider of the greatest importance, and which to my knowledge have not been hitherto discussed in this connection. The first is the manner in which the houses in New York and other large cities of the United States as far as I know them, are heated in winter, and the second are the so-called colds.

There are three different ways of *heating* a whole house from one source: the first is hot water heating. This is of the least importance to us, as it is used comparatively little in this country, although advantages are claimed for it by some reliable firms here and in Boston. Scientific investigations, however, of this method regarding our purposes have not been made.

The second way of heating houses is by means of steam. This has great disadvantages, which most of you have undoubtedly noticed to your own discomfort. As a rule, I find that houses and flats heated by this method, are entirely too hot. It is nothing uncommon to find a temperature of 80 degrees F., especially where there are small children. The people, often very intelligent, think their little ones need much warmer rooms than grown people, and are confirmed in this obnoxious idea by physicians who do not know better. Undoubtedly it is difficult to regulate the steam heat according to one's wishes. In this connection, Dr. John S. Billings in his excellent book on "The Principles of Ventilation and Heating" (New York, 1884) says: "The only way to diminish the heat is, to either close the register which cuts off the supply of fresh air, or to turn off the steam from the radiator, which will give an insufficient supply of heat. The result is, that the great majority of steam-heated rooms are, during many days in the year too hot, and at the same time have an insufficient supply of fresh air, producing much the same kind of discomfort as an ordinary *hot-air furnace*, although somewhat less in degree."

Whether this last statement is really correct, we will discuss immediately, as we are now coming *to the third and most important* method of heating: the hot-air furnace. You are all familiar with this method of heating. The shaft which conveys the so-called fresh air to the furnace, is situated near the ground and usually in close proximity to the kitchen. This shaft is so poorly constructed ninety-nine times out of a hundred, that the bad air in the cellar has free access to it. The air from these sources is heated in the furnace, and passes into the rooms. This impure air of the cellar is warmed, that means it is deprived of the greatest part of its humidity, if not of all of it. In this condition of dryness it reaches the rooms wherein we live. There it has the effect of drying the already present air and it is evident that the colder the atmosphere is outside and the more we heat our furnace, the dryer will the air become in our rooms. Now it has been shown by various experiments that the atmosphere of a room in winter should be kept moderately humid, *i. e.*, it should contain

between 50 and 60 per cent. relative humidity. The lowest point should never go down below 40 per cent. while we still feel pleasant at a relative humidity of 70 per cent.; even 75 or 80 per cent. are not considered unhealthy.

Now gentlemen, I have tested it quite often during the last two winters, and I have never seen a relative humidity of 50 per cent. in New York houses. When the outside temperature was about 30 degrees F., I have never seen even 40 per cent! The highest point reached was 30 per cent., but 25, 20, even 18 per cent. relative humidity, was nothing unusual when the weather was very cold and when this lasted for any length of time, so that the rooms were not at all or very little aired.

Casimir Wurster, who studied these conditions in New York also, found that sometimes in private dwellings, hotels or theaters the relative humidity goes down as low as 10 per cent. I made such investigations systematically during the winter of 1893-1894 in different hospitals of this city. I give you below, the data found at the Montefiore Home for chronic invalids, a hospital which is located hygienically better than most hospitals in this city, and where I found the highest percentage of humidity. Of course I took into consideration that these investigations were made at a time when the weather was already milder, and the windows and doors could be opened. Although as I said, the results were the best obtained, you will see by looking over the tables, that even in this hospital the relative humidity seldom reached 40 per cent., *i. e.*, the lowest amount necessary for our comfort. Generally it was below this point, *ergo*, detrimental to the inmates. Here are the data which Dr. Fraenkel, the house physician of the home had the kindness to assist in procuring:

Ward E. Room No. 1. Eight Beds. 1894.

Date.	Time.	Temperature. Out-door.	In-door.	Relative Humidity.	Remarks.
Mar. 11,	8 a.m.	53°	65°	41%	
	12 m.	54	65	45	Window open.
	4 p.m.	58	67½	45	Window open.
	8 p.m.	56	68	44	Window open.
Mar. 12,	8 a.m.	54	65	36½	
	12 m.	59	61	35	Window open.
	4 p.m.	60	63	39	Window open.
	8 p.m.	62	61	29	

Ward B. Room No. 4. Two Beds.

Mar. 14,	8 a.m.	54	61½	26	Window open.
	12 m.	50	60	28	Window open.
	4 p.m.	48	61	27	Window open.
	8 p.m.	50	78	22	
Mar. 15,	8 a.m.	46	68½	21	
	12 m.	50	71½	25	
	4 p.m.	48	72½	28	

Data Sheet No. 2. Ward B. Two Beds.

Date.	Time.	Temperature. Out-door.	In-door.	Relative Humidity.	Remarks.
Mar. 16,	8 a.m.	46°	68½°	34%	
	12 m.	50	70	32½	Door open.
	8 p.m.	59	71	31	Door open.

Smoking Room.

Mar. 14,	8 a.m.	50	79½	26½	
	12 m.	54	59	24	Window open.
	8 p.m.	50	78	22	
Mar. 15,	12 m.	50	71½	20	
	4 p.m.	48	76	22	
	8 a.m.	46	69	19	
Mar. 16,	8 a.m.	46	78½	29½	Door open.
	12 m.	50	76	25	
	8 p.m.	59	78	23½	

Ward A. Room No. 5. Eight Beds.

Mar. 10,	8 a.m.	52	65	40½	Window open.
	12 m.	53	64	37½	Window open three hours.
	4 p.m.	57	63½	35½	
	8 p.m.	56	65	34	Window open.
Mar. 11,	8 a.m.	53	67	38½	Window open at night.
	12 m.	54	66½	40	Window open at night.
	4 p.m.	58	67½	42	Window open at night.
	8 p.m.	56	68	40	
Mar. 12,	8 a.m.	54	66	35	Window open evening.
	12 m.	59	68½	29	Window open evening.
	4 p.m.	60	68½	25	Window open evening.
	8 p.m.	57	67	29	Window open evening.

Ward E. Room No. 1. Eight Beds.

Mar. 10,	8 a.m.	52	62	39	Window open.
	12 m.	53	63	39	
	4 p.m.	57	65½	36	Window open.
	8 p.m.	56	63	37	

Data Sheet No. 3. Ward C. Room No. 11. Three Beds.

Date.	Time.	Temperature. Out-door.	In-door.	Relative Humidity.	Remarks.
Mar. 20,	8 a.m.	54°	63°	39½%	Door open.
	12 m.	56	61	38	Door open.
	4 p.m.	58	64	35	Door open.
	8 p.m.	56	65	33	Door open.
Mar. 21,	8 a.m.	55	69	37½	Door open.
	12 m.	58	70	35	Door open.
	4 p.m.	60	68	35½	Window open.
	8 p.m.	56	70	34	Window open.
Mar. 23,	8 a.m.	57	70	40	
	12 m.	60	68	45	Window open.
	8 p.m.	59	70	30	Window open.

Ward G. Seven Beds.

Mar. 20,	8 a.m.	54	62	35	
	12 m.	56	65	32½	
	8 p.m.	56	68	31	
Mar. 21,	8 a.m.	55	70	33	
	12 m.	58	71	32	
	8 p.m.	97	70	31½	Door open.
Mar. 22,	8 a.m.	57	69	38	Floor scrubbed.
	12 m.	60	63	57	Floor scrubbed but carelessly wiped up.
	8 p.m.	59	68	27	

Ward A. Room No. 4. Four Beds.

Mar. 24,	8 a.m.	57	61	30	
	4 p.m.	58	58½	39	Door open.
	8 p.m.	57	67	39	Door open.
Mar. 25,	8 a.m.	53	64	41	Door open.
	12 m.	56	64	46	Door open.
	8 p.m.	57	60	50	Rain.
	8 a.m.	44	56	34	Rain.
	12 m.	54	58	33	Rain.
	8 p.m.	55	60	31	Rain.

Data Sheet No. 4. Ward C. Room No. 1. Eight Beds.

Date.	Time.	Temperature. Out-door.	In-door.	Relative Humidity.	Remarks.
Mar. 24,	8 a.m.	57°	68°	28%	Window open.
	4 p.m.	58	66	30	Window open.
	8 p.m.	57	70	30	Window open.
Mar. 25,	8 a.m.	53	64	38	Window open.
	12 m.	56	66	39	Window open.
	8 p.m.	44	63	41½	Window open, Rain.
Mar. 26,	8 a.m.	44	58	38	Window open.
	12 m.	54	60	35	Window open.
	8 p.m.	55	61	32	Window open.

Ward F. Room No. 9. Four Beds.

Mar. 28,	8 a.m.	40	58	22½	Door open.
	12 m.	56	67	23	Door open.
	8 p.m.	58	68	22	Door open.
Mar. 29,	8 a.m.	50	64	30	Door open.
	12 m.	53	66	41	Window open. Scrubbed.
	8 p.m.	54	73	38	Window open.
Mar. 30,	8 a.m.	45	64	22½	Window open.
	12 m.	57	65	23	Window open.
	8 p.m.	58	67	22	Window open.

Ward B. Room No. 1. Eight Beds.

Mar. 28,	8 a.m.	40	63	25	

12 m. .	56	69	25½	Window open.
8 p.m. .	58	70	24	Window open.
Mar. 29, 8 a.m. .	50	71	29	Window open.
12 m. .	53	68	45½	Window open. Scrubbed.
8 p.m. .	54	70	30	Window open.
Mar. 30, 8 a.m. .	48	64	25	Window open.
12 m. .	57	69	33	Window open.
8 p.m. .	58	70	32	Window open.

We see from this data, that the relative humidity once went down to 19 degrees in the smoking room where generally more people are together, and that it only exceptionally reached 40 degrees, although the outer temperature was already mild and windows and doors could be kept open often. How very detrimental this state of affairs is, will be clearer to you if we compare it with the same conditions in summer. In summer a relative humidity of 85, 90, or 95 per cent. is nothing uncommon in this neighborhood and this when the temperature reaches 90 to 100 degrees F. I must remind you here of the fact, that the higher the temperature of the air, the more water it can absorb, and that for example, 90 degrees relative humidity at 90 degrees F. is vastly more than 90 per cent. relative humidity at 32 degrees F. And now imagine people who lived here through the summer months and inhaled that terribly suffocating moist air, having to breathe in winter an atmosphere which contains hardly any moisture. "*Les extrèmes se touchent*" in nature as well as in real life. Next to the multi-millionaire, who has so much that he does not know how to consume his interests, goes the poor man whose children are starving for want of bread. Next to a summer with more than superfluous moisture, we have to stand a winter with much too little of it. After inhaling an air with 90 per cent. relative humidity we are forced, through the incompleteness of our furnaces, to inhale day and night, an air with mostly below 30 per cent. relative humidity. Feb. 5, 6 and 7, 1895, when the outer temperature was about zero, the hygrometer in my office sank to 15 per cent.

And now comes the important question: What influence has this abnormally dry air on the upper respiratory organs in general, and on the retro-pharynx especially? In his above cited book, Billings says: "The precise influence which either the absolute or the relative amount of moisture in air has upon health is uncertain, for habit enables man to undergo great variations in this respect without marked ill effect." While I agree perfectly with this last sentence, as otherwise we would have no healthy person in New York, I am opposed to his idea that simple dryness of the air is not injurious to health. To prove this statement, he cites Fort Yuma, Southern California, where during April, May and June the average temperature day and night is 90 degrees, even 100 degrees F., and no rain falls. Yet there is no additional sickness. He forgets two things: 1, that the people in Fort Yuma, live almost permanently in the open air, which is never stationary; and 2, that in spite of this great heat and lack of rain, the moisture never sinks to 20 or 10 degrees relative humidity. When Billings says: "A dry air with a uniform temperature makes a healthy climate as in New Mexico," he is perfectly right, but this dryness does not mean 10 to 20 per cent. relative humidity, but 50 to 60 per cent.

I must say the same about similar ideas of Hermann Reinhard (Dresden).[4] He tells us that travelers feel comfortable in some parts of the desert of Sahara, in spite of a comparatively high temperature, as the "air is very dry" and perspiration can take place. But we can conjecture what *he* calls dry air, as he indorses the recommendation of some German and English physicians, as to certain places of Cape Land as health resorts on account of their dryness. And in examining this nearer, we find that the average relative humidity here, is for October, 42 per cent, for June 62 per cent. and for the year 51 per cent.! I would not hesitate for a moment to recommend such places myself, but you understand the great difference.

Of late, very little has been written on this subject of heating, and among those authors on this part of hygiene, who discussed it some years ago there is a great dissension of opinion. The majority of them, almost all Germans, are in favor of hot air heating, as I think for want of knowledge regarding the way heating is done in this country. So Hermann Fischer (Hanover)[5] considers our hot air heating as the best, and attributes most of its disagreeable effects to uncleanliness. A similar view is held by von Fodor (Buda-Pesth) who attributes[6] the ill effects mostly to the combustion of small particles of air and the products of distillation, that are developed on the hot surface of the furnace.

These arguments in favor of hot air are based chiefly on the fact observed by von Pettenkofer, that in the royal castle in Munich, the air in the rooms, *i.e.*, after coming from the air tubes, contained more humidity than before. If we do not believe in wonders we must accept that there was some sort of humidity developed in the rooms themselves. This is the only solution I can offer for this single fact, that is in contrast to all our experience. The ideas of H. Reinhard are based mostly on theoretical deductions. The practical investigations he had made in the Kingdom of Saxony, were done by the teachers who, as a rule, do not understand anything about such things. Beside these investigations were continued during one week only, and the influence of wind, outer temperature, etc., is hereby such an important factor and underlies such great accidental changes, that we can not take these investigations as confirmatory.

On the other hand, there are men like Wolffhügel, Erismann and Krieger who say that the use of hot air heating is to be deprecated. They consider it deleterious and make the dryness of such rooms responsible for the disposition to catarrhs of the upper air passages, croup and diphtheria (sic!) etc.

The man whose views come nearest to mine is Theod. Deneke.[7] It is well known that the air has the capacity of absorbing moisture from bodies which lose it by evaporation. As, through evaporation, heat is generated, it takes up the heat also. The dry air therefore, has the dual property of drying and cooling. To what degree this takes place depends upon the dryness, the temperature of the air, and the rapidity of its motion. The dryer, the warmer and the more movable the air is, the more thirsty it will be for humidity. Now the absolute quantity of the water given off from the whole body is of no hygienic consequence, as it can be replaced constantly by the supply of fresh water. There is a difference, however, with some sensitive parts of the skin and mu-

[4] Die relative Feuchtigkeit der Atmosphare und ihre Wirkung auf den Menschen. Archiv. für Hygiene, 1895, p. 183.

[5] Ueber die Vorzüge und Nachtheile der Luftheizungen. Deutsche Vierteljahr. schrf. für offentl. Gesundheitspflege. Bd. XIV. 1882, p. 101.

[6] Ibidem, p. 118.

[7] Ueber die Bestimmung der Luftfeuchtigkeit zu hygienischen Zwecken Ztschr. f. Hygiene, I, p. 47.

cosa. "It is likely," says Deneke, (loc. cit.), "that when locally the amount of the water evaporation is much augmented, the supply of the water lost toward the surface can not go on quick enough, and as a consequence of this, pathologic changes of these parts may result. The portions of the body thus situated are the superficial mucous membranes, which, on the one hand, are constantly exposed to the external air, and on the other from direct communication with the respiratory passages." This is very rational. Epidermis and epithelium also here generally protect against the too rapid drying process, but in spite of this it will happen that a suddenly augmented or continuous evaporation will take more water from the superficial layers than can follow from the deeper portions. The consequence will be a drying up of the surface and a loss of the elasticity.

And now we come back to our first experiments and will recognize their importance in this regard. We have seen that when we connected the Liebig apparatus with the nose, and allowed the perfectly dry air to pass through, this was saturated with humidity after it had passed through the nose. It would naturally make only a slight difference whether the air is perfectly dry, as in the Liebig apparatus, or whether it contains 20 or 30 degrees of humidity, as so often found in our residences. The difference is only in degree. It is, however, proved that dry air if inhaled will become saturated in the nose and naso-pharynx, that is to say, the dryer the air is we inhale, the more moisture will be given off by the nose and naso-pharynx. The work of the nose and naso-pharynx will be so much greater with every particle of air we inhale. How long the mucous membrane of these parts will be able to furnish the necessary water supply, will only therefore be a question of time. Consequently, we will, sooner or later, reach that point where the mucous membranes of these parts will be dry like a well in summer. This will occur, for example, in very cold weather only temporarily in perfectly healthy persons, or permanently as we see it in so many thousands of times in pathologic conditions.

Now the manner by which this leads to the development of a post-nasal catarrh is not so simple. Supposing we have a person with a normal nasal mucosa. If dry air is inhaled for any length of time by this person, to such a degree that no more water can follow from other parts of the body, the erectile tissue will respond to this irritation like any other irritation, with swelling, which will recede as soon as the irritating cause ceases. When, however, this has lasted for a longer time, the swelling remains in spite of good hygienic conditions and the result is impeded nose breathing or mouth breathing.

Under such conditions the secretion that continually comes from the mucous glands of the naso-pharynx has no work to accomplish. The air does not pass the retro-pharynx and the watery discharge dries out while the solid substances, which normally are carried away with respiration and lubrication, stagnate at the retro-pharynx. The *secretion* under this drying surface is *less than normal*, as very soon solid masses adhere to the mucosa, and prevent the escape of the glandular secretions. Especially if venous stasis occurs, as it often does, blood and lymph extravasations take place, microörganisms develop on this albuminous soil and the catarrh of the mucosa results.

This, in my estimation, is by far the most frequent way a post-nasal catarrh is developed. I will add only that, as far as I know, Bosworth was the first who claimed a diminution of the secretion in this disease, although for different reasons than mine. That such people discharge more than others proves nothing. The dried masses lying in the post-nasal space are foreign bodies which the unfortunate possessor tries to get rid of by hawking, coughing, blowing or the like. This only increases the glandular secretion of the neighboring parts, *i. e.*, of the nose, the lower pharynx and mouth. It seems to me, that the so-called granular and lateral pharyngitis and the hypertrophy of the tonsil of the tongue are nothing less than a consequence of this condition. So we can say we have an increased discharge of phlegm *through* a retropharyngeal catarrh, but *not coming* from the retro-pharynx.

Another way for the development of such a catarrh is the following: if the mucous membrane of the nose is already atrophic, or it has been cauterized to such a degree that the erectile tissue can not respond to every insult, or if it can, not for a long time, then it will happen that we can not breathe through the nose, although the passages for the air are wide enough, often only too wide. This will occur, whether scabs and crusts are in the nose or not. When the nasal mucosa is dried out by the dryness of our houses, then by inhaling only through the nose we have not the sensation as if our hunger for air is stilled. The air after passing the dry nasal mucosa produces a disagreeable, not natural sensation in the retro-pharynx. The consequence will be that we expel it right away and breathe through the mouth.

I do not know whether you ever had that sensation, that you could not breathe through the nose, although its passages were free enough. In such a case the nostrils are extremely dry and your hunger for fresh air does not seem to be satisfied. You are in a state of apnœa. The air before reaching the retro-pharynx must be partly saturated with moisture and if it is not, it seems that it can not be tolerated, and only irritates this part. Instinctively we give up nose breathing and breathe only through the mouth. If scabs or crusts prevent nose breathing, this will naturally happen sooner. As soon as this takes place, the catarrh of the retro-pharynx will develop in the same way as before.

I took the swelling of the nasal mucosa as an example only for obstructions of the nose. Anything else that obstructs nasal respiration as polypi, etc., will naturally have the same effect. The fact is, that any atmosphere containing less than 40 per cent, of humidity will have the same effect if a person is subjected to it for a longer time, and this we all are, more or less, during at least five months of the year. Although the human body can live under many unsanitary conditions, still we must not forget that a certain amount of moisture in the air is necessary for respiration, as well as for transpiration.

A heated room should not be warmer than 65 degrees F. If we then feel cool, it is a sign that there is not enough moisture in the air; in other words that the air not only absorbs from the upper respiratory tract, but from our lungs also humidity, and with that heat. As soon as the hygrometer in a room with 65 degrees F. shows 50 to 60 per cent. relative humidity, this will be rather too warm, than too cold. But this never occurs in our houses during winter time.

On the contrary, the people feeling cool at a temperature of 70 degrees F. have extra fires made, and bring the temperature to 80 degrees F. and above, as I have not infrequently seen it. If they try to go out into the open air, where a humidity of 80 to 90 per cent. encounters them, these extremes must have a very bad effect on the whole system, and "colds" on every *locus minoris resistentiae* will be of general occurrence. The principal reason why so many people like a Russian bath in winter, is that they are only too glad to fill their whole respiratory tract with moisture. This relieves them greatly of the dryness in their system.

I will add here that I always noticed more patients complained of dryness of the throat and nose after a cold spell. But during the last winter, 1894-95, which was a very cold one, the number of patients at the Montefiore Home who complained of this was immense. It was entirely out of proportion to the few patients whom I see at the above institution in summer, when they are in the open air during the greater part of the day.

The answer how to prevent the bad effects of our poor heating system, will be, not only do we need in building a house a mason and a builder, a carpenter and a so-called sanitary plumber, but also a man who, from a medical standpoint, could judge whether the heating system and other things are sanitary or not. But so long as we do not have such officers, we have to see to it ourselves that the furnaces are correctly built, that is, not too small, etc., and that a provision for the supply of moisture be attached to the furnace.

This latter is, so far, very hard to fulfill. I have written to different furnace-makers but all the appliances for this purpose which I have tried were not satisfactory. It is my conviction, however, that ere long this will be improved if only the attention of the physicians and the public is drawn to it.

The next point that comes into consideration in connection with our subject are the so-called colds. As natural and well founded as it may be to try to prevent colds, so ridiculous and in its sequelæ so dangerous is the fear of catching cold, that it terrorizes in this country all classes of the population. You can justly say, that never had the people such nonsensical, hare-brained ideas regarding the hygiene of their bodies as at the end of the enlightened nineteenth century, when everybody thinks they understand a good deal about medicine. Through advertisements of patent medicines, indorsed not unfrequently by prominent ministers, through unscrupulous newspapers presenting unripe medical ideas to the Sunday table of their public, they learn just enough to make everything wrong. The manner in which we dress ourselves, how we live, when we go out, or stay at home, etc., in everything is governed by one idea, the ghost of catching cold. Although it may be that many people frequently catch cold in the open air, this should not be a reason for us to seclude ourselves from it. On the contrary, we should just go out in the open air, as these people become ill just because they do not get enough fresh air. The animal organism is destined to breathe permanently in the open pure air, and every hour that we sojourn in closed rooms is detrimental to the organism. Naturally I will not say by this, that we should give up our homes, our culture, etc., and become cave dwellers, troglodytes or, like the old Germans, sleep in the woods on bear-skins; by no means. Only one thing I should like to impress upon the public, that we should extend our cultural endeavors also to the care and proper development of our respiratory organs. Let us stop for one moment to consider how many hours the average person in New York is in the open air, and we shall soon see that we do a great deal for our digestive, but nothing for our respiratory organs. In the morning one walks for a few minutes to the nearest station or car, rides down town in a vehicle overcrowded with humanity, and filled with the most miserable atmosphere, only to remain an entire day in an office, or more frequently still, in a factory loaded with dust, smoke and all possible foul gases, a factory that is never reached by any fresh air draught. Evenings one returns homeward in the same manner, to go afterward into an overcrowded theater or the like.

And the women? Well, the poorer ones work in a cigar factory or in a sweat-shop, packed together in a room, the air of which would even be too bad for the worst criminal. The well-to-do women are better off in some respects; but with them the fear of catching cold is so paramount that they do not dare to go out when the wind blows a little bit stronger, or even if it should rain a trifle. In accordance with these ideas the children also are brought up. One does not risk sending them out, without being convinced beforehand that no rain or snow is likely to fall. If, however, they are once caught in a shower, or the like, then naturally such a child has a cold, and one reproaches one's self for having been so careless. I can not restrain myself from reminding you of the words of an old physician, Johann August Unzer, who wrote as follows: "Nature has given to the man the open air as the element wherein he should live. Nevertheless we have been too politic, that we should not have noticed that this element is soon too cold or too warm, soon too moist or too dry, soon too windy or too quiet. . . . We take care that our children, who are born to breathe fresh air, do not come in contact as long as possible with it. We consider it a matter of conscience to take them on a beautiful day, out of the stinking room into the open air, that by no means they should get too early a better air than that infected with the smother of effluvium, with the smell of the swaddling clothes, food, coal and foul vapors. Yes! in order not to lose any of these precious odors, we plaster up the windows and cover up the doors. We grown-up people so little lay aside the prejudice of our wet-nurses and parents against the free air, that we prefer to look at it as the cause of most diseases. . . . And when we, finally, through this pernicious smartness have acquired bad diseases, we lock ourselves up in a still much worse air, nail our windows and wish that our servants were ghosts who could come through locked up doors, only that we should not need to suffer a little restoration by opening them. So peculiar are people, when they become too smart for Nature!"

So far, Unzer, whose words are more applicable to-day than formerly.

If we want to cure a post-nasal or similar catarrh of the respiratory organs, it is not sufficient to prescribe a gargle or a spray; we must treat the whole body, as every cold, every noxiousness of the skin works back on the mucous membranes.

Our whole mode of living is apt to make us sus-

ceptible to the influence of weather, and therefore we must fight against it, we must harden our body, not to get a coryza or bronchitis from every so beneficial breath of air. We must move daily for a certain time, not too short, in the open air, and especially should we spend our vacation, our pleasures in the open air. If you send your young people, suffering from any chronic trouble of the respiratory organs to the mountains, you will find them only too often in an overcrowded ballroom, dancing all night. How much better would it be for them, to do this in the open air! When shall we see the day, that our children are no more taught in overcrowded prison-like school rooms, but, as it is the highest of my ideals, in a garden under the trees? To have a school for hundreds of children, without even an open place to play in, as the custom is now in public and private schools, is a crime against the rising generation.

Another prejudice that prevails here more than elsewhere, is that one should go out little, or not at all in rainy weather. The old story goes, that one gets wet feet from it, and that is detrimental. But why this should be more detrimental than wet or cold hands, no one can as yet explain to me. The young plant needs rain for its life, and should we deprive our children of the same element, that acts so refreshing and vivifying upon them? Is it not unheard of, that school children are not allowed to go home at the noon hour when a few drops of rain fall from heaven? And is it not a shame that a school commission, unassisted by physicians, has made this a law?

Not long ago, Dr. F. Welz made investigations in the hygienic laboratory in Freiburg upon the contents of bacteria in the air. He showed that an increase of bacteria takes place toward the warmer season, a *decrease* in *winter* and *in rainy weather*. So from this side also, rain is considered favorable and healthy. You most likely have heard of the great "curer" Kneipp. How is it that this Bavarian priest, an honest, as I believe, but absolutely ignorant peasant, has such great success? If you come to his village, Wörishofen, you will find all the patients badly clothed and their feet bare. The women wear no corsets, the men no underwear. "All or nearly all of them," says the *Normandie Medicale*, (quoted from the *New York Medical Journal*, Sept. 1, 1894), "have faith in the priest. This faith is evidently a great aid to the treatment, but it is incontestable that there is something in the priest's mode of treatment. This does not consist alone in applications of water; a number of medicinal herbs are employed, plenty of air, and a hygiene altogether different from that usually practiced. Very little clothing is worn, linen trousers, a coarse linen skirt, no underskirt, a jacket, a straw hat, and sandals, but no stockings, compose the usual costume. In this manner cutaneous respiration is facilitated as much as possible."

Our knowledge is to a great extent an empirical one, and we as physicians, have accepted lessons from wherever they came. So we have for example, the wet packs from a shepherd, Priessnitz, in Silesia, we have the much-used drug, cascara sagrada, from the Indians, and now do not let us be blind against everything that this peasant Kneipp teaches us. It is the cutaneous respiration that is systematically suppressed by our mode of dressing. This system of over-dressing is a total failure, as the diseases of the respiratory organs were never so numerous as in our generation. Away with this system that has made 80 per cent. of our population nothing but pathologic specimens! If Mr. Kneipp recommends us to go barefoot, this is only part of a system to harden ourselves, which we all know, but which we never follow.

Those country people, in Germany and elsewhere, are really lucky who go barefoot in summer, and thus not only harden their feet, but their whole system, especially their respiratory organs. Among such people you will seldom find rheumatism or catarrh. You can all do the same, even if it were only for a few minutes in your room. Even that helps. Before all, you should see that your children should go barefooted whenever they are at home. If they do it in summer in the country, so much stronger will they be, and so much less "catarrh" will they have in winter. Somebody told me that it is the style at the University of Oxford for the children of the professors to go barefooted until their twelfth year. Those children are said to be exceptionally healthy.

In this connection, says the celebrated physiologist Brücke: "I can not approve of the fact, that in some schools the children are forbidden to come bare footed. This is a gratuitous and unnecessary taxation of the parents. By his nude feet, the child injures neither the teacher nor the other scholars, but he does so very much by feet dressed with shoes, but not with clean stockings."

The celebrated African traveler, Rohlfs, tells how he visited a wild tribe whose chieftain was suffering from a terrible coryza. He was the only one who had this affection, and he was the only one who wore shoes and stockings!

That cold baths and washings are excellent means of hardening ourselves is generally known. If anybody should demur and say that the peasants as a rule bathe very little, and still are much healthier than city people, he forgets that the life of a peasant consists in perpetual hardening, and that he does not need these means. If anybody should believe that he keeps his body healthy by wearing underwear winter and summer. he is very much mistaken. Underwear is to be recommended only in very cold weather, otherwise it is injurious to one's health. The more clothes we have on, the more sickly we will be, and the less clothes the healthier. But the most objectionable of all, are rubber shoes and rubber boots, in which our feet roast as in an oven. The climate has nothing at all to do with this, and just because a change of weather occurs so very frequently here, we must protect ourselves against it in a natural manner, *i.e.*, still more harden here than elsewhere. I again quote from Brücke, who says: "The reason why Italians of the higher and middle classes are effeminate, is because the fashion compels them to go about even in the hot summer, chiefly in dark woolen clothing, under which they generally wear chemises."

If one compares this garb with that of the old Romans, one will very soon answer the question, whether the effeminacy comes from the climate or from the garb. So it is in this country, but I will abstain from drawing any comparison between the wild Indian and the hypercultured young American of to-day.

In conclusion, I quote from Shelley:

". . . . . but in this life
Of error, ignorance and strife,
Where nothing is, but all things seem,
And we the shadows of the dream,

"It is a modest creed, and yet
Pleasant if one considers it,
To own that death itself must be
Like all the rest, a mockery."

943 Madison Avenue.

DISCUSSION.

DR. CASSELBERRY—Over-heated apartments and too heavy clothing are certainly conducive to "taking cold." I am of opinion that more persons "catch cold" by getting too hot, than by being too cold. Neither is it necessary to become chilled while in an over-heated condition in order to suffer that congestion of the mucous surfaces termed a "cold," although this doubtless is one of the methods, but the mere relaxing effect of heat to the body surface is capable of congesting at least the turbinated bodies and starting a cold. This is especially true of over-heated rooms. With our present modes of heating I think 65 degrees scarcely sufficient, but 70 degrees F. is adequate.

I would advise against the wearing of very heavy underwear, preferring a light grade of woolen underwear for winter, supplemented by varying grades of outer clothing and overcoats. For spring and fall, still lighter underwear of good merino or wool, and for midsummer, gauze for the ordinarily robust individual. The daily morning cold bath invigorates the vasomotor system and so prevents more certainly than any other one thing frequent "colds." It, and other hygienic management should supplement local treatment in catarrhal cases. I am not in accord with the author of the paper regarding the evil effect of overshoes. Ordinary leather will not keep out moisture, and wet or even damp feet in cold weather endured for hours without opportunity to change, is a prolific cause of "cold." A protective overshoe as low as will answer the purpose and removed on passing in-doors seems necessary.

DR. L. R. RYAN, of Galesburg, Ill.—I did not hear the whole paper, but there are some points that are of vast importance, and one which should be brought to the attention of the people at large, and that is the matter of excessive clothing, and living too much in confined houses. In this connection, an article I recently read in a current magazine comes to my mind. It is in regard to the condition of the Terra del Fuegans of South America; they were naturally a strong robust people, lived outdoors continually and wore little or no clothing and in their natural condition were free from disease. When the missionaries established headquarters there and converted them to Christianity, inducing them to wear clothing and live in civilized houses and in a civilized manner, they immediately began to deteriorate physically, until the whole tribe has been destroyed by throat and lung diseases and especially consumption. We must keep as closely as possible to nature and avoid those unnatural changes.

DR. WOOLEN—If, as the gentleman claims, that in his State the children have colds, etc., in spite of their being out-of-doors all the time, there must be other reasons for the development of such catarrhs which I do not know, but I would certainly not blame the fresh air for it. Regarding the Doctor's remarks about the seat of the polypi, I must say that there are a great many seated much higher than the middle turbinated.

CANCER OF THE RECTUM—ITS EXCISION AFTER THE METHOD OF KRASKÉ AND MODIFICATIONS THEREOF, WITH A REPORT OF CASES.

Read at the Twenty-fifth Annual Meeting of the Medical Society of the State of Colorado, June 18, 1895.

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The older methods of excising the rectum have been in large part superseded by the sacral procedure, and it is safe to assert that of all malignant growths affecting this part of the body, but a small proportion will be found amenable to cure when dealt with from the perineum.

Although Kocher, of Berne, had for some years added to the posterior incision a removal of the coccyx, it remained for Kraske, of Freiburg, to lay down those fundamental rules which, though since modified from time to time, enable us to cope with something like an assurance of success with this distressing affection.

It was before the German Surgical Congress of 1885 that Kraske first proposed to gain easy access to the upper portion of the rectum by resection of the lower part of the sacrum. This original procedure has since undergone important modifications. Its essential details are as follows: the patient lies on the right side somewhat in the Sims' position, the thighs and legs flexed and a stout support raising the pelvis. A cut is made from the left border of the sacrum, opposite its second vertebra, to the anus; this cut quickly curves to the midline at its upper end and reaches the posterior surface of the sacrum and coccyx. The coccyx is removed, the left lateral sacral ligaments severed, and the sacrum chiseled across obliquely from a point opposite its third foramen on the left side to the lower right hand corner. The severed piece is removed and the bleeding checked. The tissues are divided in the midline until the posterior surface of the rectum is reached. The anus is freed and the rectum loosened, chiefly by blunt dissection from below upward, to a point well above the growth. The peritoneum is opened, the rectum drawn down, cut off, the remaining end brought out below the cut surface of the sacrum and stitched to the adjoining skin.

The peritoneal pouch is occluded by a plug of iodoform gauze and the entire open wound filled with the same. Healing takes place by granulation and a sacral anus results.

Valuable as was this procedure in the efficacy with which a high lying cancer could be reached, it left much to be desired and various improvements in technique were set forth as different operators gained experience. Schede, instead of plugging the peritoneal pouch sewed it up as soon as the rectum had been drawn down and before it had been severed, and when the anus was not involved he united the cut end of the rectum to it, thus restoring the continuity of the canal and giving the control of a sphincter. In practice it was found that the passage of feces tore out the stitches, prevented union, and a fecal fistula generally resulted. To obviate this, Schede did an inguinal colotomy at the time of or directly after the operation. This not only added to the time occupied by the serious major procedure, but left the lower bowel filled, and has now been superseded by the colotomy being done so long prior to the proctectomy as to allow of firm fixation of the gut in the inguinal region and a fairly thorough cleansing of the rectum itself. This preliminary colotomy may be considered indispensable whenever it is desired to preserve the sphincter ani and do an immediate anastomosis.

With a view to avoiding the loss of the resected bone and the consequent weakening of the pelvic floor, Levy, in 1889, devised an osteoplastic procedure whereby a flap of bone, together with the overlying soft parts, is turned up and replaced. He made a transverse cut, some four inches long, across the sacrum at its lower end. Lateral cuts are made from the ends of this through the gluteus maximus muscle; the anterior

and posterior sacro-sciatic ligaments are divided, the bone chiseled across, and with an elevator the connective tissue on the anterior surface of the sacrum is separated. The skin flap with the attached bone is then turned down and the rectum comes into view. This is resected, the cut ends united, the bone flap replaced and sutured, the horizontal incision closed, the lateral ones united in part and well drained. While this is, in theory, a suitable procedure, it is in fact difficult to perform and unsatisfactory in results, and it remained for Rehn and Rydygier to devise a procedure which seems thus far to give the greatest promise. In this, an incision is made from the posterior inferior spine of the ilium to a point midway between the anus and the coccyx. This is met by a transverse cut across the sacrum at the point at which it is intended to divide that bone. The left sacral ligaments are divided, the bone cut across, the bone flap turned over to the right side, the rectum excised and sutured in the usual manner and the bone flap returned and sewed in place. Gauze drainage is provided and the skin wound closed in part.

Exfoliation of the bone rarely occurs, and even though this should take place, nothing will have been lost by the attempt at osseous repair. The results in typical cases are all that can be desired, so far as concerns the immediate condition. The retained sphincter insures the nearest approach to a normal bowel condition and the pelvic floor is left intact. In those cases in which the anus is involved it is needless to say that this is impracticable. Here the gut must be fastened to the skin. In many cases, control of feces and gas will be improved by twisting the lower end of the rectum as advised by Gersuny. In every case the inguinal anus should be closed in the usual manner so soon as the rectal condition may warrant.

Whatever the procedure employed, sacral resection of the rectum can but be considered as belonging to the severer operations in surgery. It may be easy or difficult to perform. When the growth is small and the tissues about the rectum free from infiltration, a blunt dissection may be made with the loss of but little blood. If, however, the perirectal tissue be involved, a wide dissection must be carried out and the operation may be long and bloody. Oozing from the cut surface of the sacrum can be checked by gauze tamponade; all bleeding vessels must be quickly caught and tied. At all times intelligent retraction and active assistance are of the greatest value. It is all important that the loss of blood be the least possible, hemorrhage being the greatest factor in the production of shock.

In nearly every instance the peritoneum must be opened, to allow a drawing down of the gut. This adds but little to the danger of the procedure; an immediate suture can quickly be made. The sigmoid flexure must be detached from the surface of the sacrum to allow a drawing down of the upper segment.

In cases in which four inches or more of the rectum have been resected, it is necessary to loosen it very thoroughly from the sacrum in order to approximate the cut ends without traction. This loosening is accomplished in part by dividing the mesentery, and in part by blunt stripping up. It is not infrequently necessary to ligate the superior hemorrhoidal artery on either side, and in such cases Kammerer has proposed to cut away still more of the rectum and bring down a portion better supplied by other branches of the inferior mesenteric, in order to do away with the possibility of an anemic necrosis of the lower end of the gut. The approximation must be made without tension, for the blood supply is poor at best, and the bowel is without the peritoneal investment which is so great a factor in prompt healing. In those cases, however, in which there is no tension, good blood supply and a diversion of the feces through a previously made inguinal anus, primary union will be found the rule rather than the exception.

In certain cases the surgeon will find it necessary to content himself with a partial operation and to postpone completion until a subsequent sitting. So, when the amount of blood lost has been considerable and the shock severe, as in patients who presented a previously weakened condition, one may be obliged to hastily tack the bowel posteriorly, plug the peritoneal opening and tampon the entire wound. The operation is a severe one, frequently bloody and tedious. The writer fails to understand Bardenheuer's assertion that he completes the procedure in fifteen or twenty minutes, stripping up the rectum by blunt dissection and often finding it unnecessary to open the peritoneal cavity. If amputation be made and a sacral anus established it may be possible to avoid opening the peritoneum. Rarely can this be done, however, when the bowel ends are united.

While the mortality attending this operation has steadily diminished, it is yet considerable. From the data at hand, I judge it to be in the hands of competent operators, about 20 per cent. The chief causes of death are shock, hemorrhage and exhaustion; peritonitis, I believe to occur but seldom, and sepsis should be infrequent. Drainage is easily made and should be liberal. A caution may be made regarding the too free use of iodoform gauze; the surface left is large and quickly absorbs. I have myself seen iodoform intoxication, very quickly disappearing, however, on removing the drug.

My own operations have been three in number. In one additional late case I removed the sacrum, but found the disease too far advanced to warrant attempt at excision. I should have done better had I followed this course in my first case which was the fatal one. In a considerable number of instances I have advised against radical operation, in place, thereof, a palliative colotomy.

My cases are as follows:

Case 1.—Cancer of rectum; Kraske's operation. Death from acute anemia and shock. Miss K., age 27 years, single, was transferred to my service at St. Luke's Hospital, New York, July 25, 1893, by my colleague, Dr. Robert Abbe who was about leaving town for the summer. No previous history bearing on the present condition. Three months before seen she had begun to suffer with obstinate constipation from which she had previously been free. Fecal movements were narrow and painful, but not bloody. The patient had lost thirty pounds in weight, and much strength during the three months; her general condition was fairly good. Pulse 86, temperature 99.

The examining finger introduced into the rectum revealed an annular, irregularly nodular mass extending three inches above the anus. The constriction admitted the tip of the index finger, which could be swept about, over and around the tumor. On vaginal examination the mass was felt to push the posterior vaginal wall forward, but not to involve it. The lymphatics in the immediate neighborhood were enlarged.

Eight days were occupied in putting the patient in the best possible condition, and on August 3 the following operation was made: ether; six inch incision over sacrum and coccyx to anus; coccyx and lower segment of sacrum removed (Kraske.) Anus and lower part of the rectum freed from surrounding tissues. Dissection difficult and bloody, owing to fairly extensive perirectal infiltration. Cancerous

mass found to extend well up anteriorly. Peritoneum opened, mesorectum severed, rectum drawn down and cut off, stump brought out beneath cut surface of sacrum and sutured to skin. Peritoneal opening plugged with iodoform gauze, wound filled with boro-salicylic gauze. The operation lasted two hours and the patient lost a considerable amount of blood. Vessels were clamped as soon as seen, but there was a continuous general oozing which could only be controlled by pressure. At the close of the operation the pulse ran from 140 to 160. An infusion of salt solution reduced it to 120; in spite, however, of active stimulation and further infusion the patient sank progressively and died thirty-six hours after the operation. A microscopic examination of the tumor showed it to be carcinoma.

I am now convinced that this growth was too extensive for removal. This was not understood until the rectum was exposed. I should have done better had I contented myself with a proctotomy above the tumor, or, better, done an inguinal colotomy at a subsequent time. In this connection the following may be of interest:

Case 2.—Mrs. D., a woman of about 40 years was referred to my service at the New York Cancer Hospital Oct. 1, 1893, by colleague Dr. H. C. Coe. For six months she had suffered with painful bloody stools, steadily diminishing in size. Examination revealed a nodular mass encircling the rectum about two inches above the anus. The finger passed through this. High infiltration was not felt per vaginam. October 11 Kraske's operation. On opening the peritoneum, the infiltration was felt to extend too high to warrant attempt at removal. Peritoneum closed and wound packed. The patient made a smooth convalescence and was advised to have an inguinal colotomy made whenever the symptoms should demand it. In April, 1894, she was in good general condition. I have not heard from her since.

Case 3.—Cancer of the rectum. Kraske's operation. Recovery. Freedom from relapse at the end of twenty months. Mrs. F., aged 35 years, was referred to my service at the Cancer Hospital Sept. 28, 1893, by Dr. F. A. Manning. For six months she had observed mucus and bloody discharge with rectal pain. The stools had diminished in size; on examination a hard nodular mass was found to encircle and constrict the gut just above the anus. Operation Oct. 9, 1893; sacral resection. Peritoneum opened; mass found to extend one inch above the rectoperitoneal margin and to involve the anus. Rectum amputated above growth and upper end fixed beneath sacrum. Wound packed with iodoform gauze. Slight iodoform intoxication which disappeared on change of dressing. Undisturbed convalescence. The patient regained good control of feces but not of gas. I learned of her recently. She has had no evidence of recurrence. Pathologist's report: "carcinoma."

Operation was in this instance easy. The growth was confined to the rectal wall and anus. The loss of blood was but slight. I do not think we can determine definitely the extent of the disease prior to exploration. We can not make sure in an individual case that the operation will be accomplished rapidly and easily. We must in all instances be prepared for a long and difficult procedure.

Case 4.—S. M., a man of 52 years was admitted to my service at the Cancer Hospital June 15, 1892, with a history of having had occasional bloody stools for three years, these having of late become painful. Examination revealed a tender, bleeding, granulating tumor just above the anus, through which the fingers could be passed. The anus did not seem to be involved. Operation June 30, 1892, in my absence by Dr. Van Arsdale, assistant surgeon. Sacral resection, six inches of rectum removed, end of gut drawn down and stitched posteriorly to anus. Wound packed, smooth healing. On July 18 and again on August 21 secondary operations were done to restore the continuity of the gut. This was effected and the patient left the hospital completely healed and with control of feces, though not of gas. Pathologist's report: "carcinoma."

Case 5.—Cancer of rectum—Resection—Recovery. Mrs. R., a woman of 39 years, came to my office in February, 1894, with a history of painful defecation during the past four months. She had occasionally noticed blood in the stools and had recently "felt a lump." Examination revealed a rough, annular, friable mass just within the anus and lying rather on the anterior rectal wall. On vaginal examination it seemed limited to the lower part of the rectum. Operation, sacral resection; peritoneum opened and gut pulled down. A string of infiltration ran well up on the anterior wall. After removal of some five inches of the rectum, sparing the anus, the tension was so considerable that in view of the patient's general condition it was deemed unwise to prolong the operation by a high loosening of the gut. It was accordingly brought out beneath the sacrum. Undisturbed convalescence. Pathologists report: "carcinoma." I am unable to ascertain the present condition in this case.

All of these operations were made before I became familiar with the osteoplastic procedure of Rydygier. In a future suitable instance, I should proceed, so far as present knowledge goes, after his plan. It permits of the most thorough extirpation possible with restoration of the bony parts.

Much depends on a proper selection of cases. A large proportion of patients with cancer of the rectum will be found, when first seen by the surgeon, to be in too advanced a condition to warrant thought of cure. The disease progresses slowly and often reaches an advanced stage before the increasing occlusion of the gut seriously calls the patient's attention.

The earliest possible diagnosis on the part of the family physician is of the greatest importance. These cases first come under the care of the general practitioner, and his examination should be most thorough. In no affection about the rectum should digital examination be omitted. The examining finger is of far greater value than instruments, so far as the region which lies within its reach is concerned. In case of a suspicious though indefinite ulceration, dilatation of the sphincter with removal of a small piece of the tumor for microscopic examination will be found of the greatest service. So long as the patient's condition warrants, we are not justified in leaving any measures undone which may aid in establishing a positive diagnosis. I have more than once called attention to the fact that age is of slight value in differentiating cancer. The age of the patient in Case 1 was 27 years. Cancer is not so very infrequent in patients under 30 years.

It is difficult to obtain the exact mortality attending extirpation of the rectum; in general, it may be estimated at about 20 per cent. Before the introduction of the Kraske method, it was something like 50 per cent. It will doubtless fall materially as the selection of cases and the operator's technique further improve.

Curtis collected statistics of 420 cases from 11 clinics and found that without separating the perineal from the sacral operation, the mortality was 15.5 per cent. It is without doubt greater in the sacral than in the perineal, as in the former the disease requiring operation is further advanced and the procedure itself is much more severe.

As regards the chief point in any operation for malignant disease, immunity from relapse, I am unable, with the literature at my command to give even approximate figures. Curtis, in 144 cases which had run over four years, found 21.5 per cent of four year cures. These were, however, both sacral and perineal operations, and more of the latter than of the former. Whatever the percentage of radical cures may be, it is sufficient to encourage surgeons in their attempt. So far as we now know, the only hope of cure in cancer lies in its early recognition and prompt and wide excision, and it is on these lines that progress must and will be made. Advance in

the past ten years has been steady and much ground has been gained. It is to be hoped that the future will give us a specific, be it in the line of serum or other therapy, against this most malign disease. At present, however, our trust must be placed in operative procedure, and in the accomplishment of lasting results the physician and the surgeon must coöperate.

Stedman Block.

WHAT CAN AND CAN NOT BE DONE FOR NASAL CATARRH BY LOCAL APPLICATIONS.

BY ALLEN DEVILBISS, M.D.
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The fact that the majority of humanity are afflicted with some form of nasal disease, and after doing all we can by hygiene, internal medication, and if necessary the removal of tissue, there will in most cases remain a condition requiring local applications, are sufficient reasons for our trying to suggest a plan whereby the remedy used may be applied so as to produce the best results.

A spray thrown into the anterior part of the nose with its direction parallel with its floor, can not be expected to produce a cure or relief, on account (as a rule) that the diseased condition is located in the roof and not the floor; neither can we expect to accomplish good results by inhaling through the nose a vapor only to come in contact with the mucous covering the membrane.

To do effective work, the instrument should be so constructed that its point may be carried into the vestibule far enough to reach the nasal cavity proper, and the spray directed toward its roof so that the mucus will be washed away by the solution used. This can not be accomplished by the counter current from an atomizer or the vapor from a vaporizer.

To meet this want I devised an instrument with a movable spray-carrying point which may be set so that all parts can be treated by a direct current; it may be used for spraying any remedy that will be beneficial to an inflamed mucous membrane, or that will not injure a healthy one. It has no leather or rubber washer, consequently can be made perfectly clean by boiling. Solutions can be easily warmed by holding it over a gas jet or lamp a few moments, and this is essential, for by applying them warm there is no shock; and it soothes the membrane, which it will not do if applied cold.

When using oils keep the point below the level of the cup, as you will then have the advantage of gravity to bring it from the cup to the point ready for atomization. In this way the oil is carried to the membrane with as little air as possible.

When treating the patient anteriorly, set the point upward to throw in the direction shown by No. 3, Fig. 1. Place the left index finger beneath and near the movable point, carry it into the nose, resting the finger upon the upper lip, raise the cup above the level of the nose, give two or three compressions of the bulb, and the roof of the nose will be flooded with the remedy. By using it in this way there is no danger of irritating the membrane by continually pumping air against its surface, the air current being a necessity as a carrier and in every other way a disadvantage.

Treatment in a majority of the cases given in this way will be all that is required, but in some cases it will be necessary to reach the posterior turbinate bodies and meatuses by throwing a spray from behind the soft palate. This can be accomplished best by having the patient hold down his own tongue, for by so doing the parts will remain passive, which must be to make a perfect application, fill the cup part full of the solution to be used, heat over a lamp or gas jet, set the point anteriorly at an angle of 45 degrees, then carry it into the throat close to either side of the uvula, back of the soft palate, being careful not to touch the posterior wall of the pharynx, keep the left hand close to the left side of the mouth, so as not to be in the way of seeing, then with one or two quick but prolonged pressures of the bulb we will have covered the post nasal cavities. There are but very few patients who can not in this way tolerate treatment (if warm oils are used) without gagging, or not take more time than it would in a manner not half so complete.

It requires but little time to teach patients how to make applications in the nose anteriorly, by setting

Figure 1.

Figure 2.

the point upward as shown by No. 3, Fig. 1, placing the thumb of the left hand under the tube close to the movable point as shown in Fig. 2, the fingers being placed upon the upper surface of the tube, then carry it into the nose until the thumb rests upon the upper lip, using it for a steadying point and gauge as to depth of entrance; elevate the cup above the level of the nose so as to have the advantage of gravity, then give two or three quick but prolonged compressions of the bulb and the application will be sufficient, in the majority of cases; when not, in a short time they may be taught to make them posteriorly; they quite soon learn how to drop the tongue in the floor of the mouth or hold it down with the tubes of the spray producer. Many can use it without seeing, but they can see how to use it by the use of a mirror and keeping the hand that holds the in-

strument to one side as shown by Fig. 3, so as not to obstruct the light.

Children who do not breathe easily through the nose may be relieved by a few applications of warm oil. This cleans out the nasal cavities and allows them to breathe through the nose. In treating children it is best to leave the point of the spray straight or nearly so. Applications should be made while lying down. Place the index finger of the left hand close to the point, and rest it upon the child's upper lip, then compress the bulb a few times which will fill the nose with warm oil.

I believe that by following up this plan of treatment with children when they have colds they will have much less trouble when they are older. When treating an acute condition, no irritating remedies should be used. Warm aseptic oil is all that will be beneficial locally. If warm enough it will soothe, protect and cause a contraction of the capillary vessels, thus relieving the congested parts.

In simple chronic nasal catarrh, there will be many cured, and marked benefit received by all, from spraying a warm aseptic oil over all parts affected. If the discharge is purulent or tough or ropy, first clean with a solution made from Seilers' tablets, then apply

Figure 3.

the oil; the addition to the oil of an alkali or antiseptic will be of service if not made too strong. In cases of hypertrophic nasal catarrh where inspiration is interfered with, beside the local treatment given, the same as in simple chronic rhinitis, tissue may have to be removed. It is no use to treat these cases for a short time. They must be treated or treat themselves every time there is an acute attack. By so doing, instead of growing from bad to worse, an improvement may be expected.

This I find patients will be satisfied with, if it is so represented to them, instead of promising definite cures.

In treating atrophic nasal catarrh the essential thing to do is to clean the parts. It may be necessary to use Dobell's solution or a similar one to remove the crusts, but generally the better way is by direct applications (as before described) of oil, for the reason that we have no osmotic action, no increase of desquamated epithelial cells, no inflammation set up by throwing it into the middle ears, all of which we may have by using watery solutions.

It is often beneficial to add to the oil some form of an antiseptic such as oil of wintergreen, camphor, menthol, or oil of eucalyptus, five drops to the ounce, etc. The list of antiseptics is a long one to choose from, and the odor and taste of each differ so much, that we need not have any trouble to carry out the proper line of treatment and make sufficient changes to satisfy the mind of our patient. I treat them until I get the parts under control and then teach them how to make the application.

A dentist can scrape off incrustations from a tooth, but he can not give the fine polish to the enamel that it had. The rough condition left serves as a predisposing cause for the return, but if a brush is used from time to time the incrustations will be prevented. Just so with the nasal mucous membrane after there has been a chronic inflammation of it. The original condition can not be restored by any course of treatment, but by treatment from time to time the serious difficulties that would result therefrom may be prevented and the patient made comfortable through life. This they are entitled to, more they can not procure, and they will be content unless promised a radical and permanent cure. In a healthy condition the nasal mucous membrane furnishes about sixteen ounces of fluid every twenty-four hours. By it the material filtered from the air or accumulations from any other source are carried through the nasopharynx into the esophagus and stomach unnoticed. But when from any cause an irritation or inflammation is set up, the amount of fluid may be increased or lessened. If increased, soothing applications must be made to relieve the irritation or inflammation.

If the amount of fluid has been lessened, we find desquamated epithelial cells, mucous corpuscles, and the impurities taken from the air remaining in the nasal cavities, and we must accomplish what the diseased condition prevents being done in a natural way. If the case be one that has not progressed too far, by using a solution that will cleanse, soothe and protect the parts, they may be restored to almost a natural condition.

Where the pressure of adventitious tissue has caused absorption of the glandular elements which prevents the process of exosmoses from the numerous blood vessels, the sooner a patient realizes he must put his nose in the same line with his hands and face to be cared for, the better off he will be. No one would expect to keep the face continuously clean by washing it for a month or two, neither can the nasal cavities by any kind of treatment for a short time, (when the conditions just described exist) be kept continuously in a clean condition, which must be, in order to have any hope of improvement or prevent an increase of the difficulty.

I have long since arrived at the following conclusions: that surgical work must be done in certain cases; constitutional treatment is necessary in some; local applications in all; and that the remedy should reach all parts affected and in itself or the means by which it is applied, shall be non-irritating; and that it is useless to prescribe a spray producer for a patient without first teaching him how to use it.

Dear Doctor:—Please direct the attention of your friends to *our* JOURNAL. We will be pleased to send sample copies to any names you may suggest.

HYPNOTIC INSANITY.

Read before the Marion County, (Ind.) Medical Society, June 11, 1895.

BY E. D. MOFFETT, M.D.
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In writing upon this subject, I wish to show the true merits of hypnotism; and to congratulate my profession upon the fact that we have been slow to indorse this one fad which came to us a few years ago with such wonders in the cure of many diseases. Yes, the greater body of our profession discard it altogether.

The hypnotic state is a diseased condition of the mind; and I feel that it is possible to prove that it is the worst form of disease—that of insanity.

Hypnotism, mesmerism or suggestion is that condition of body or state of mind which is characterized by an apparent sleep with a perversion or destruction of the will; or that part of the will which governs the reason and judgment. For example, the person under its influence will stare into space or with eyes closed seems to be perfectly unconscious of himself or of his surroundings; and will follow the dictates of a supposed hypnotizer, no matter how absurd and contrary to the sense of propriety.

Suggestion is the primary law of all knowledge. Therefore know that we are handling only the extreme possibilities of this law. All knowledge is derived in three ways: suggestion, deduction and induction. In our early childhood we know nothing except it be imparted to us by friends, or by some object; as a tree which suggests some thought to the novice, thereby a state called memory is created. Likewise a mirror or the gentle stroking of the forehead by an operator with thoughts expressed, will produce the same state of mind called suggestion. And when that individual mind has lost, by this process, the will power governing judgment and reason, we have what is called true hypnotism. Please to remember this definition, for soon we will find what a wonderful power the law of suggestion, or the perverted condition of it which misleads, has in this world.

Advanced in years we begin to reason by deduction and herein lies the power of theorizing. If you remember, a few years ago I read you a paper upon the subject of "Theory in Medicine," which brought out some of the fallacies of the deductive method of reasoning in medicine.

By induction we have much of our true knowledge to be thankful for. In suggestion we have three stages: receptive, somnolent and cataleptic. First, to be able to receive a suggestion the mind of the individual must be willing to receive. Here again is the will brought into power. To receive or not to receive is the question. Now what harm has a thought or state of mind upon an individual who has the equilibrium of mental forces well balanced by the will? None whatever. Right here is the beginning and ending of a weak and strong mind. He who stops to reason is wise, no matter how imperfect the conclusion. But he who receives and reasons not (with the will as the governor of the mental engine) is prone to mental aberrations. Whether the individual has entered a physical drowsy stage of hypnotism or not, if we have that state of mind forces, after receiving an impression from a thought or an object, which is embodied in the definition given, we have that mind hypnotized—diseased. Diseased because no physiologic laws, either physical or mental, can be destroyed without being pathologic.

The complete somnolent stage is that condition in which we have catalepsy, and what is called suspended animation. And those cases which from severity of pain become unconscious for an indefinite period and then regain consciousness without any apparent shock being the cause.

Now let us see if it is not a logical conclusion that the mental state and causes of insanity are identically one and the same phenomena as perverted suggestion.

So far as the mind and thought is concerned, insanity is the loss of the proper coördination of mind forces. It is an impairment or destruction of the will governing reason and judgment. Example: a brain takes on a suggestion from any cause, as some friend is trying to kill that individual. If this be not so, and the reason and judgment governed by the will of this case can not be convinced by friends or by a logical conclusion of self-reasoning this brain is unbalanced.

Whenever a brain takes on a thought once, it is a well-known law for it to be recalled at will and in time can become automatic. To have this condition to take place at unusual times we have the state called auto-suggestion, or the power of the brain to repeatedly place itself in a state or condition of thought unconscious to the individual. Actions usually follow thoughts, and this is the reason we have to have asylums. One who has had hypnotism practiced upon him is very liable to get into the state of auto-suggestion. Is not this true of all the insane, that there is a constant recalling of some absurd thought? And this is produced by the laws governing hypnotism—the reason and judgment at fault. Consequently, the insane are unnatural suggestable cases. Here is my argument: "Things equal to the same thing are equal to each other." Hypnotism equals the destruction of the mental force of the will, which holds in balance reason and judgment. Insanity equal the impairment of the same forces. Therefore hypnotism is insanity; conversely, insanity is hypnotism.

Society is all agog with this dreadful disease. Look at the youth who persists in dissipation at the dance and other enjoyments when his friends and physician try to bring him to his proper senses. And do you say that the law of suggestion which has misled into supposed pleasure and enjoyment is not the cause of all this? A well-balanced brain is one that is temperate in all things.

Again, a young man is pushed to extremes financially to keep up with society. Soon his salary is too small to meet demands. His mind wanders; embezzlement, exposure, prosecution and conviction results; and society laughs. Society has been the medium of suggestion. The law provides for the poor criminal, but the beautiful mirror which has suggested his downfall still goes unbroken. Let a corporation, a body or society be the cause of one's downfall and it is all right. But if an individual is the medium of one's errors it is quite a different thing, as in the following: a man with reason unbalanced, plots with one somewhat weaker than himself to commit a murder. The man who will use his erroneous reasoning and influence to cause another to commit such a crime, probably for a paltry sum, is hypnotically insane. The suggestion being a hate, jealous love or desire for some special gain and the like, which has led his mind astray. Is not the will here at fault?

The one who does the deed is hung for being a suggestable subject; insanely so. While the other is executed for discovering the weakness of his brother.

This is what the law does with those who are not insane enough to let their neighbors know of their weakness in time to commit them to an asylum. Some time ago a man called at my office for dates of an injury received by a bucket falling from a building in course of repair. The injury was a glancing one, and took off a part of the scalp on the top and front part of the head. No concussion or shock followed. He is now preparing for a suit for damages. In course of his remarks he declared that the injury had affected his brain and left him in such a state that he might kill me then if he should get mad. I wish to tell you that the only relation of his injury to present mental conditions is that of suggestion by a supposed permanent injury to the brain; an impossible condition. He is insane upon this subject and hypnotically so. The poor man is prone to go on with his auto-suggestion until he does some one bodily harm.

This is the form of insanity which has produced our assassins; Guiteau, Mayor Harrison's murderer, etc. Just to think, in this day of learning that there is no law to take hold of people who are possessed of threats against their brother or against themselves—cases of suicide and its attempts. We are much in need of statutory provisions for such people.

Even religion is not exempt from this disease. Take the early days of persecutions, crusades, witchcrafts and its punishments, all produced by a want of proper brain balance; but no phase of society is more rapidly getting out of the turmoils of this disease than religion—and doing so by consistency and education. If there is one phase of society which is slow in progress in the right direction, it is that of politics. So little of true governmental principles are taught to us in early youth in school, we become grown and do very little reasoning for ourselves. We are partisans because of the law of suggestion and not much force or reasoning is expended in such attainment. Men go wild over an argument during a campaign or over some great financial question; the conclusion proves the premise, but too often the premise is wrong.

Our last panic was nothing more than an epidemic of wild suggestion that spread over our country like a cholera germ. And the same disease played havoc with the LIII General Assembly, and with our late Indiana Legislature. Germs of poisonous thoughts get into the brains of men and they spread worse than an epidemic disease.

Medicine comes in for its part. Do not think because we are last that we are least. Many examples could be recited, but you can recall many, and time forbids.

Look at the pandemic effect of the "elixir of life;" the much abused operation upon the cervix in the past; and the extreme of supposed cures to which Battey's operation has been subjected; many of the untimely and hasty therapeutic experiments, etc. Why do we not all know the truth first and then tell it, instead of proclaiming a thing true, then theorizing to prove it?

A very prevalent class of cases are those of abnormal sexual relations. I refer you to the learned treatise on "Psychopathia Sexualis," by Kraft-Ebbing, translated from the German by Chaddock, a book well worthy of the perusal of the profession.

Hysteria, melancholia, catalepsy I believe to be in different stages of suggestion, usually caused by some impairment of one or more of the vital organs other than the brain. Disease of the liver can produce marked melancholic insanity. I never have tried to practice hypnotism, but have seen several cases by others and a few cases capable of producing the state themselves. While in the hospital we had a case of true catalepsy which could be easily put into the state by a hypodermic of a small portion of morphia. I could not trace the history of this case, but I believe the auto-suggestion was produced by an impairment of the mental function.

A case of labor under my care was completely hypnotized by the severity of the pains. She lay with eyes open staring into space, pupils contracted; pulse and respiration normal. There was only a slight movement of hips during the pains. When she awoke from her partially cataleptic state she was surprised to know the labor had ended. Three days later she went into this state again and continued so for three hours—probably produced by a suggestion on my part that if she did not take better care of herself she would have a chill and might die.

Some time ago I attended a spiritualistic séance. After a short and literary effort upon the part of the spiritualist, she tried to hypnotize herself by looking intently for a few moments into one corner of the room. She should have selected a bright object, for I could readily see she was not an auto-suggestable case. She made a failure of the above, but she soon began to get communications from spirits for a few of the faith believers present. And here is another of our hypnotically insane beliefs. The uncontrollable desire for smoking and drinking is mental disease also.

Treatment.—If my argument be true, every State and nation should make laws prohibiting the public exhibition of hypnotic cases. It should be made a penal offense to try to induce it other than for a cure of the insane. And from what little can be accomplished with it in these cases, there will not be much of this mal-suggestion used.

Nevertheless, there is a good lesson taught in Chaddock's "Psychopathia Sexualis." From a number of the sexual perverts described by him, we draw the conclusion that the cases are insane upon their particular phase of sexualis. And please not to forget that these people get into this state by continually harping, thinking and recalling their abnormal thoughts and putting them into action. All this by auto-suggestion — thought and action repetition. Where is the will, reason and judgment of these cases? Talk about the world not being full of insanity!

Some of you are probably thinking why we are not all incarcerated. Here is a fair solution to the problem. It seems to be a case where the majority rules; or to the victor belong the spoils. Chaddock tells us that many of his cases have been relieved and cured by the practice of creating a new train of thought and a regenerated will, by proper suggestions, while the patient was under the hypnotic influence. Is there not a thought revealed in these cases worthy of consideration? Here it is: all of these cases were far advanced in immoral dissipations, who sought him for treatment. They realized their insan-

ity and sought relief. Their will was not wholly destroyed. A cure was effected in a good per cent. of cases.

I believe that herein lies a system which might prove wonders with the incarcerated insane. That is, to make them by some process, realize that they are mentally diseased, and that there is a cure for many, sick as they are; and if they could be made to realize this and seek the remedy with as much earnestness as did Chaddock's cases, we might have a place for true hypnotic suggestion but not "hypnotic insanity."

16 W. New York Street.

REMARKS ON APPENDICITIS.

Read at the meeting of the Northern Tri-State Medical Society at Coldwater, Mich., July 9, 1895.

BY J. H. CARSTENS, M.D.

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DETROIT.

Appendicitis is talked of and written about a great deal, and when I go around with my professional friends who practice in the small cities and villages, they all say: "Appendicitis is a great fad. We seldom see a case; why is it that you see so much and operate on so many, while we rarely see a case?" Some of them even, who look at everything with a pessimistic eye, say that many cases are operated upon and reported that are not cases of appendicitis at all. Some of them have quite a large practice and only once in a while do they see a case that they call appendicitis, and how others can see dozens and hundreds a year is utterly beyond their comprehension. But the solution is very easy; from what I am able to find out, from the number of cases of appendicitis occurring in the course of a year in a large city, I have come to the conclusion that about one case of appendicitis occurs to five thousand population, when we consider that throughout the country there is only one physician to less than five hundred inhabitants, which means less than one hundred and fifty families. This is the average; some have a great many more and some a good many less, but a physician who has three hundred families, I will say, has a pretty good practice, and if any one should have double that number, he has an extraordinary practice. A physician with three hundred families, that is, a good large practice, would have about a thousand people under his care, and if the above statement of one case of appendicitis in five thousand population is correct, you would naturally conclude that the average physician with a fair practice would only see a case of appendicitis, on an average once in five years.

Perhaps my estimate is too high; say a case of appendicitis occurs to every two or three thousand inhabitants, and it certainly does not occur any oftener, then it would still hold true that the average general practitioner would not see a case of appendicitis but once in two or three years. Now, let us go one step farther and bear in mind that appendicitis is sometimes a very obscure disease, which the general practitioner will very often overlook, and no blame can be attached to him for that, as he sees these cases so seldom. We can furthermore see that the statement of the general practitioner, especially of those living in the country and the smaller towns, that appendicitis is a rare disease, is perfectly true from his side of the question. Still, the field of medicine has been so thoroughly and repeatedly gone over, the cause, the pathology and the treatment of the general run of diseases, that the more rare and obscure diseases are now attracting wide attention, and he is *the best physician*, who can not only properly diagnose the common everyday cases of malaria and typhoid fever, dysentery, pneumonia and so on, but he, I say, is the best physician who can properly diagnose and institute the proper line of treatment in those cases which are obscure and less common like appendicitis, like pus tubes, and like renal and hepatic calculi.

In the large city, where the daily press is always on the lookout for news, prominent citizens are sometimes attacked with this disease, the papers take notice of it, and this occurring a number of times in the course of a year finally attracts the notice of the laity and they learn on inquiry from their family physician about the signs and symptoms and causes of this disease. The general practitioner is frequently asked by his patients about this disease, and thus his attention is more vividly attracted; he is constantly on the lookout to detect it when he has cases with symptoms pointing to this morbid condition and will call in other physicians in consultation so as to be sure. Hence, in a large city, few cases escape without being properly diagnosed. Still, there are general practitioners who do not have it sufficiently impressed upon their minds, that *peritonitis means appendicitis*. They are impressed with the idea that appendicitis virtually does not exist, and let me say right here, that I exclude pelvic peritonitis caused by pus tubes, or puerperal peritonitis caused by septic infection from the uterus. I refer to the so-called idiopathic peritonitis, which is always caused by appendicitis—that is to say, in twenty-four times out of twenty-five and the twenty-fifth case is that exception, which always proves the rule. In other words, ninety-six cases out of a hundred are caused by appendicitis, while four cases in a hundred are caused by perforation of the bowels from ulcerations, malignant growths, etc. And if the general practitioner would only have *his mind sufficiently impressed with this one thing, that peritonitis is appendicitis*, I know he would be astonished at how much oftener he will find appendicitis than he ever thought possible. If he will carefully inquire into the history in a vast majority of cases, he will find that they have had one or more previous attacks. The attacks may have been slight, perhaps they were only laid up for a day or two with what they called colic, but on careful inquiry you will find that the patient had severe colicky pains in the right inguinal region, which is attributed to cold or indiscretion in eating, and be passed over without having consulted a physician. Perhaps he has had a number of such attacks. On careful examination, the physician will find that the patient has more or less pain over the whole abdomen, but that there is one excruciatingly painful little spot midway between the umbilicus and the crest of the ilium—the so-called McBurney spot.

There may be tumefaction, generally not, because as a rule the appendix is behind and the cecum in front, containing more or less gas, so that no dullness on percussion can be detected. Sometimes vomiting ushers in an attack; the fever is sometimes high and

sometimes quite low; I have seen cases where perforation occurred with temperature over 99.5.

It is only by being constantly on the lookout for this disease when you have cases of abdominal trouble that you detect it; slight cases will very often be overlooked.

During the last six weeks I have had a few cases which might prove interesting:

Case 1.—Miss A., aged 25, first attack eighteen months ago. She was laid up three months in bed, then two more slight attacks, then another attack last June, and finally took to bed until September; then again had another attack in February. The sixth attack induced her to enter Harper Hospital and submit to an operation. Operation was performed May 18, in the usual way. The appendix was large and strictured at the junction of the cecum; not perforated, and was removed and the incision closed with buried kangaroo tendon; no drainage. She was up on the twelfth day and has made a splendid recovery.

Case 2.—Mr. W., aged 18, had an acute attack of three days' duration with temperature 103. He had had a slight attack four weeks previously, but this had been overlooked. He was immediately taken in the ambulance to Harper Hospital and operated upon May 26. The appendix was ruptured in the middle, but was walled in by exudate; it was removed, a gauze drain was used and a part of the incision closed with silkworm gut sutures. Recovery uninterrupted.

Case 3.—Mrs. L., aged 21, has had four attacks and agreed to go to Harper Hospital Wednesday evening to be operated on Thursday. Tuesday afternoon she was suddenly taken with a fifth attack and I had her immediately conveyed to the hospital in the ambulance and operated on that night, May 28. The appendix was very large, full of muco-purulent fluid and on the point of rupturing in one place, where the mucous and muscular coat were ulcerated; no drainage. Buried kangaroo tendon was used to close the incision. She went home on the thirteenth day.

Case 4.—Maud H., aged 10, first attack of ten days' duration; large tumor filled with pus. She was taken to the hospital, the tumor simply opened and a large amount, (more than one-half pint) of stinking pus was removed. The cavity was cleansed and drained and the incision partly closed with silkworm gut sutures. She made a splendid recovery and went home on the twelfth day. This operation was performed on June 22.

Case 5.—Mr. B., aged 30, was taken with appendicitis in April. I saw him in consultation, but considered the symptoms so mild that no operation was deemed necessary, unless serious symptoms developed. In a week or ten days he seemed to be all right, but was again taken with severe pain in the right side. This would subside with hot applications and he would be around again for a day or two, and then have another attack, and so continued for two months. I again saw him and pronounced it relapsing appendicitis. I operated on him July 1 at St. Mary's Hospital and found the case as stated. Removed the balance of the appendix and closed the incision with buried kangaroo tendon except for about half an inch, where I left a gauze drain. This was removed in forty-eight hours and a small rubber tube inserted. He made an uninterrupted recovery.

Case 6.—Mrs. W., is an unfortunate woman. I had operated on her two months ago for pus tubes. She went home and seemed all right for four weeks then began to have pain in the abdomen, especially on the right side; her temperature ran up and came down again to about normal; she became weaker and weaker and could retain no nourishment. I was called in consultation and diagnosed appendicitis. She was immediately taken to the hospital and I found the appendix large, inflamed and adherent, but unruptured. This was removed and the incision closed. Operation July 2.

These few cases and it is hardly necessary to say that I had none who died, or I would report them also, occurring within six weeks, will again make you wonder where we get them. Some of these patients have come several hundred miles, and the territory covered by them embraces a population of two million or more. And when I consider the number of cases operated upon by my colleagues, I am enabled to make the assertion I did at the opening of this paper; appendicitis is not so frequent as it is supposed to be, and still it is more frequent than many practitioners believe, as they never look for it.

In resumè I would lay down the following rules:

1. That the general practitioner with a good fair practice will hardly see more than one case a year on an average.

2. That peritonitis always is appendicitis and will be readily diagnosed by every practitioner if he will only look for it.

3. That all cases of appendicitis should be operated upon as soon as diagnosed, because the danger is almost *nil* before rupture, but after rupture even an operation will not always stay the progress of the septic condition.

Of course, I admit that some cases will never recur, and if we operated on every case, we undoubtedly would operate on some cases that would get well without an operation, but we can not tell which case will recover and have no relapse, and which will not, and by waiting until rupture has occurred many cases will die which by prompt surgical interference would be saved.

SAVING LIFE OF CHILD DURING LABOR.

Read before the Montgomery County Medical Society, September, 1894.

BY E. W. KEEGAN, M.D.

CRAWFORDSVILLE, IND.

Napoleon asks the question, Is the route practicable? and the answer was, It is barely possible to pass. The obstetrician may well ask, Is the way ample? is the pelvis of the mother normal? We may have any degree of abnormality to the most complete dystocia, compelling us to say it is impossible for a living child to pass. It is generally believed an obstetrician's duty to perform Cæsarean section or symphysiotomy for the child's safety, knowing they are to-day safe operations if the technique of their performance is observed, and the mother's life is less jeopardized than by any other method of delivery. Theory has long held the view that, in making a sacrifice of life, that of the mother should be second to the child, nor can we expect professional support in declaring this a great injustice. Does not the mother, as a rational being, enter the marriage relations with full consent and knowledge of the consequences that follow gestation and delivery? She so delivers her future for the intentions of marital life. Why should we, as accoucheurs give consent to laws that do not equalize the relations between child and mother? Do you not see from the commencement of embryonic life the child is but as so much clay, shaped by the greatest sculptor, Nature's hand, whose nicety of touch and delicacy in outlining finishes and brings to birth the beginning of a being which has been proved to develop into the highest type of animal life, and should it not have the same consideration? Why, then, is it not as criminal to destroy the life of the child, as the mother, without resort to means for its life as well? It is sometimes considered justifiable to take life in self-defense, for it is not the mother who is supposed to destroy life but the accoucheur.

We have now given us, by advanced science, desirable means of combating with the difficulties of years gone by, to where an amputation is no longer looked upon to be followed by gangrene and death. Time has proved beyond doubt the effects of antiseptic surgery.

Cæsarean section has lost much of its former mag-

nitude. When the dystocia is not so great, but sufficient to make impossible the delivery of a living child without unjustifiable compression of the head, we should resort to symphysiotomy, an operation attended with much less danger to the mother and general safety to the child. Though an old operation, it has, in the past two or three years, under aseptic care, given brilliant results and will perhaps render Cæsarean section rarely necessary. I will not make a general resumé of all accidents incurred in parturition, endangering the child's life. The amplitude of the mother's pelvis deserves attentive consideration, but as the range of variance is so broad and conflicting when contrasted out of the lying-in chamber, I would advise a careful study of its anatomy and differential points when in attendance, for they have a certain individuality that only experience can give explanation of, where authors read so confusingly.

Next in importance we note presentation. In the vertex presentations we will first consider face anterior, which is considered very unfavorable in multipara but more so in primapara. If an early diagnosis can be made and dilatation sufficient by placing the patient in an extreme Trendelenburg position, introducing the hand well up to the shoulder, rotating the body of the child with its head, avoiding undue force, we can convert a face anterior into a face posterior. This is often facilitated by the patient lying on the side toward which the rotation is directed. I use the same position for shoulder presentation, pressing the shoulder well up and with the hand externally carrying the child's head well over the superior strait and holding it in position until well engaged. This treatment I learned from Dr. M. B. Wright, of Cincinnati, many years ago and find it preferable to turning. In presentation of the hand, the only alternative is to turn, bringing both feet down under full chloroform anesthesia, directing an assistant to hold the child well up, so that if the oncoming head does not pass readily, forceps can be applied and immediate delivery made. It is culpable negligence to allow a child to perish for want of assistance, and no accoucheur should deny himself such aid as a physician can render when circumstances make it possible over any other. In placenta previa it is generally preferable to tampon until dilatation is sufficient. If the engaging head does not control hemorrhage, apply the forceps and make rapid delivery, immediately introduce the hand into the uterus and deliver the placenta, using friction to excite contraction. If this does not check the hemorrhage, compress the abdominal aorta until the action of ergot, hypodermically, can be secured; small pieces of ice, injections of per sulphate of iron with peroxid hydrogen; in failure, the first can be used.

In prolapsus of funis, many suggestions have been offered, all with little success. In my experience the knee chest posture and the hand have given the best results governed by the circumstances of the case, and in no instance have I seen any of the appliances recommended of any avail. As an oxytocic, I have found quinin valuable in increasing the uterine contractions, though not capable of inciting them. If it does not increase the pains, in two or three hours apply the forceps and deliver. In the use of them, I believe a suggestion of my own will be valuable to those making forceps delivery: never make traction unless you have an assistant. Make firm pressure laterally and over the fundus uteri, continuing the pressure until told to desist. For this reason, I offer this suggestion: it is known to every obstetrician that the pains subside spasmodically, doing so while traction is being made. The uterus becomes relaxed and the child, in an effort to force the head from the forceps after the uterine pressure is taken off, breaks its neck, but by the observance of what has been given, such an accident is avoided. In eclampsia, when dilatation is incomplete, I dilate either manually or instrumentally under anesthesia, delivering without delay, using all prophylactic means to guard against sepsis. I regard the risk to the mother and child as materially lessened, for more children are lost during labor from dilatory procedure than through active interference. You all know that if we wait several hours for dilatation, injury to the brain, convulsions, is generally fatal to both. In a general summary of this paper, my desire is to impress upon you the point that a ready conception of, and ability to combat all or any of the emergencies occurring in the lying-in chamber, governed by calm judgment, quick action and mechanical ingenuity are the sequela of a successful accoucheur.

NECROLOGY.

GEORGE A. MURSICK, M.D., died at his home in Nyack, October 17, of diabetes. He was born in New York city in 1834, and was graduated from the College of Physicians and Surgeons in 1860. In January, 1863, he entered the Union Army as assistant surgeon. He was promoted to be surgeon in charge of the General Hospital at Duvall's Cliff, Ark., in November, 1864, and became medical purveyor of the Department of Arkansas in April, 1865. He went to Nyack to practice in 1869. He leaves a widow and two sons.

ADELBERT F. G. KUEHN, M.D., of New York city, died at his home October 22, of appendicitis. He underwent an operation at St. Mark's Hospital two days before. Dr. Kuehn was born in Pittsburg in 1852. He was a graduate of the School of Pharmacy and the College of Physicians and Surgeons, in class of 1892. He was a member of the Harlem Medical Association, and the New York County Medical Society. He leaves a widow. The place of interment was Wilkesbarre, Pa.

J. M. PRIDE, M.D., of Algona, Iowa, October 18.——E. J. Cook, M.D, of Milwaukee, Wis., October 31, aged 76.——D. B. N. Fisk, M.D., of Amherst, Mass., October 28, aged 53.——Amos Fowler, M.D., of Albany, N. Y., October 23, aged 76.——W. H. Sedgwick, M.D., of Granville, Ohio, October 25.——T. M. Tilford, M.D., of Horse Branch, Ky., October 27, aged 72.——Joseph Daffron Schoales, M.D., of Philadelphia, October 24, aged 53.——J. A. Phillips, M.D., of Pittsburg, Pa., October 25, aged 63.——Thomas F. Young, of Brooklyn, N. Y., October 26, aged 30.——Francis W. Gibson, M.D., of Columbia, Mo., October 17, aged 32.

Incorrect Opinions no Ground for Rescission of Settlement.—The Supreme Court of Minnesota states, in the case of Nelson v. Minneapolis Street Railway Company, decided May 24, 1895, that the plaintiff having presented a claim for personal injuries sustained by her while a passenger on its cars, the defendant employed physicians to go and examine her, and report to its claim agent as to the extent of her injuries. The physicians had no other duty to perform, and this was the extent of their authority. At the time of such examination, in response to plaintiff's inquiry whether they thought she was seriously or dangerously injured, the physicians replied in the negative, saying she would soon be all right again. Afterward she settled with the defendant, and executed to it a full release and discharge, relying upon the statements of the physicians. It subsequently developed that she was much more seriously injured than the physicians in their opinions expressed to her, but there was no evidence that these statements were not their honest opinions, given in good faith. Under these circumstances, the court holds that the fact that the opinions of the physicians proved to have been incorrect, constituted no ground for a rescission of the settlement and release.

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SATURDAY, NOVEMBER 9, 1895.

THE PARASITES OF MALARIA.

The literature upon the parasitic origin of malarial fever, though already very extensive, has received an important addition by the publication of a systematic study of the malarial fevers of Baltimore and its vicinity, by THAYER and HEWETSON,[1] assistants in the medical clinic of the Johns Hopkins Hospital.

The study begins with a historical summary of the more important literature concerning the malarial parasite, and the table of references arranged in chronologic order at the end of the article shows that 359 separate works have been considered, all treating of some aspect or other of malarial fever since the recognition of its parasitic cause.

The original portion of this article consists of a general analysis of 616 cases of malarial fever observed in the Johns Hopkins Hospital from June 14, 1889 to Jan. 1, 1894. As regards the age of these patients, comparison with the ages of a similar number of non-malarial patients, selected at random, at once shows the greater frequency of malarial fever among children and young adults. This, the authors regard as probably due, not so much to a greater susceptibility as to the fact that the young adult is more exposed to malarial influences—remaining out of doors in malarial districts at night, etc. There were about four times as many male as female malarial patients and this evident discrepancy is also explainable on the theory that the ordinary avocations of the men subject them to greater exposure than the women who, remaining in the house, are oftener spared.

While the per cent. of ordinary colored patients, taking the cases at random, was 12.2, the per cent. of colored malarial patients was only 4.7, the figures tending to uphold the generally accepted view that the negro is much less susceptible to malarial infection than the white.

As regards the season, it was found that while malaria may occur in any month of the year in Baltimore, yet nearly one-half the cases were observed during the months of September and October. In the majority of the cases the examination of the blood was conducted with the fresh specimen and it may be said without entering into any descriptive details, that the authors firmly believe that there are distinct varieties or types of malarial parasites which are not interchangeable but distinct varieties, though closely allied to one another; biologically combined infections, with parasites of different varieties may occur, but they are rare—less than 2 per cent. of all the cases studied.

Of the 616 cases studied by these writers, the type of the parasite was definitely differentiated in 542, and of these 150 were instances of single tertian infection, 188 of double tertian, 2 of single quartan, 3 of triple quartan; 188 were examples of infection with the aestivo-autumnal parasite and 11 were instances of mixed infection with aestivo-autumnal and tertian parasites. Further statistical tables show in an interesting manner, how the type of the infection becomes more and more severe as the summer and fall approach; thus, in the first half year only 5 aestivo-autumnal cases were observed, while in the last half 183 cases were observed, and as the seasons indicated advanced, the cases of double tertian infections also became more common.

In the course of their studies the authors reach the conclusions that the tertain type of fever depends on the presence in the blood of a parasite that passes through its cycle of existence in about 48 hours. The segmentation of this organism, at intervals of about 48 hours, is always associated with a febrile paroxysm. Frequently, owing to the presence of two sets of organisms, there are quotidian paroxysms. Quartan fever, rare in Baltimore, depends on a blood parasite that undergoes segmentation which is associated with a febrile paroxysm every 72 hours. Double or triple quartan infections are possible. In regard to the aestivo-autumnal fever they conclude that it is due to the organism described by MARCHIAFVA and CELLI, but that the cycle of existence of this parasite has not yet been followed out in an entirely satisfactory manner; it probably varies from 24 hours or under to 48 hours or more; the main seats of the infection with this organism are, apparently, the spleen, bone-marrow, and other internal organs, but few stages of the development of the parasite being ordinarily found in the peripheral circulation. This organism causes fevers that vary greatly in their manifestations. There may be quotidian or tertian inter-

[1] The Malarial Fevers of Baltimore, Johns Hopkins Hospital Reports, Vol. v, 1895.

mittent fevers, or, more commonly, more or less continuous fever with irregular remissions.

While THAYER and HEWETSON reach reasonably definite and apparently sound conclusions as regards the distinctness of the various types of material parasites and their relations to the clinical forms of malaria, yet they have to point out that the nature and the relations of certain bodies observed in the blood of malarial patients are still, in their opinion, undetermined. This is especially true as regards the nature of the flagellate bodies which may develop in all types of malarial fever; concerning their nature and relations nothing definite is yet known. It also appears that certain crescentic bodies, associated with the aestivo-autumnal parasite, are not yet thoroughly understood.

Concerning the treatment of malaria the authors had abundant opportunity to observe that the specific action of quinin upon the three varieties of the parasite is indeed undoubted. Quinin exerts this remarkable influence most strongly when the parasite is undergoing the process of segmentation and before the fresh segmented forms have had time to enter into new red blood corpuscles. It is consequently best administered, then, just before the beginning of a paroxysm, if we wish to obtain the greatest effect with a single dose. The specific action of quinin is much more rapid and certain in the tertian and quartan fevers than in the aestivo-autumnal infections.

ABDOMINAL vs. VAGINAL HYSTERECTOMY.

The technique of hysterectomy has been so much improved of late years that the operation, which was during the first quarter of the century not accepted as a legitimate one by the majority of surgeons, has now been admitted to be a standard operation, and in suitable cases an imperative one. The method of performance of hysterectomy is now under discussion, and those practicing that branch of surgery termed gynecology, seem to be divided into two opposing camps; one favoring the abdominal method of extirpation of this much suffering organ, and the other the method through the vagina. As in many other questions raised by specialists, it must be settled on the general principles of the branch in which it is included, and it would seem as if there were no necessity for acrimony of debate on this subject if we could once agree as to the facts; and if it shall be proved by careful statistics that one method is safer than the other, so far as its immediate effects are concerned; that it is as thorough, so far as the remote effects of recurrence of the disease for which the operation is performed are concerned, then there should be no question as to the adoption of that particular method.

And just here authorities differ as to which is the safer method. We may easily exclude all of those cases of enormous fibroids in which the uterus and its attachments are too large to be removed through the vagina, as nobody would think of performing vaginal hysterectomy in such cases; but in those cases in which we have a carcinoma involving the cervix or body of the uterus, in which there is no undue enlargement, it seems reasonable to suppose that if by the process of enucleation, a smaller wound and reduction of the liabilities to infection, we can remove the uterus through the vagina, there should be equal promptness in accepting that operation. But the truth is is that each case must be decided on its own merits and the particular characteristics of the case. In cases of fixation of the uterus and where the adjacent pelvic glands are seriously involved, it is obvious that the vaginal route does not afford access to all the diseased tissues, and that the mere removal of the uterus by enucleation is inadequate for the removal of the disease. The vaginal route, too, lest extreme care be taken, is much more liable to convey infection into the general cavity than a clean abdominal incision under the usual aseptic precautions, and a careful study of the papers presented by the respective disputants would seem to resolve themselves into the proposition that as cases differ so must the treatment differ. The knights of old fought about the shield whose surfaces were of gold and silver. Each looked on the side next to him and affirmed the shield to be gold or silver, as the case might be, and they were both right and both wrong. And so the surgeon who does not recognize and appreciate that his choice must be guided absolutely by the nature of the case and the conditions then present, is liable to be sometimes right and sometimes wrong.

DR. LEVI COOPER LANE of San Francisco, Cal., first performed vaginal hysterectomy in this country in 1879 (*Pacific Medical and Surgical Journal*, 1879, vol. XXI, p. 489). DR. H. A. WRISBERG of Göttingen, excised the uterus through the abdomen in 1787.

COMPLETE EXCISION OF PATELLA.

In the *Provincial Medical Journal* are reported two cases of complete removal of the patella, and reference is made to three other cases. DR. KUMMER of Geneva, has reported the following data in the case of a female aged 25 years, with primary tuberculosis of the right patella, but with a perfectly intact knee-joint in which he made excision of the bone with excellent results. Two months after the operation, the patient was able to extend her right lower limb as under normal conditions; would kneel with perfect freedom, and without any pain or discomfort. Could walk four or five hours daily without lameness or fatigue, or run down staircases with ease, etc. In short, the only inconvenience caused by the absence of the knee-cap consisted in a relatively weakened extension of the corresponding limb.

"There can be no doubt," says DR. KUMMER, "that in suitable cases, a total extirpation of the patella can be performed without impairing the patient's gait, or markedly interfering with movements of the knee-joint. The operation is indicated in cases of tubercular osteitis of the patella, provided the articulation remains yet intact. Extirpation can actually prevent the development of articular lesions, and thus save the knee-joint, provided the operation is resorted to sufficiently early. In cases of tubercular osteitis of the knee-cap, total removal of the bone offers better chances in regard to recovery than scraping out the morbid foci."

Another successful case is that of DR. KAUFMANN, reported in the *Correspondez-Blatt für Schweizer Aerzte*. The patient, a married lady, aged 33, was suffering from fungoid osteitis of the left knee-cap, of eight years standing. A month after the operation, she, being frightened by a fire next door, tore off all the dressings and ran out of the house, having swiftly descended a staircase. Since then her knee-joint has been perfectly movable and her gait normal. DR. KUMMER mentions two other cases of primary tubercular osteitis of the patella in boys, in which the whole of the bone was removed by PROFESSOR KOCHER of Berne. An interesting case of total excision of the patella for acute necrosis has also been published in the *Lancet*, by MR. FREDERICK PAGE of Newcastle-on-Tyne. The patient recovered, with a perfectly useful limb.

THE PATHOLOGY OF IDIOCY.

HAMMARBERG ("Clinical and Pathologic Studies concerning Idiocy, with Investigations into the Normal Anatomy of the Brain Cortex," Academic Thesis, Upsala, 1893) who unfortunately died from the effects of appendicitis at the very beginning of a most promising career, reaches the following conclusions after a thorough and elaborate examination of the brain cortex of a number (nine) of idiots: in all the cases, which include the principal forms of idiocy, it was possible to explain the psychic defects as due to a lack of cortical nerve cells capable of normal functions.

This absence of normal cells was found to be due, either to an arrest of the development of a greater part of the cortex at a stage corresponding to the embryonal, or to that found in early infancy, or to the actual destruction of cells during the growth of the brain. In all cases it is made clear that at a certain time the normal development of the cortex became arrested.

The degree of idiocy is shown to depend upon the intensity of the acting cause, upon the extent and the functions of the cortex involved, and upon the time at which the arrest in development occurred. It is also demonstrated that certain abnormal cell forms as well as peculiarities in the arrangement of the cells in the cortex, which have been regarded as characteristic of the idiot, merit only a secondary importance. The essential moment in the production of the psychic defects of idiocy is the lack of cells capable of function.

In addition to the usual methods, HAMMARBERG relied essentially upon a method of his own, by means of which he was able to determine with exactness the actual number of nerve cells in a cube of brain cortex 0.1 mm. in size, and before drawing any conclusions as regards the cortex of idiots, he carefully examined the cell arrangement, number, size and structure in the various layers of the normal cortex. Preliminary investigations demonstrated that fixation and hardening in alcohol, cleaning in xylol, and embedding in parafin resulted in the least actual artificial changes which were also constant in different brains and in different parts of the brain cortex. The pieces were then cut into serial sections, fastened on the slide and stained with methylene blue according to NISSL'S method. Counting of the cells in the various layers of the cortex was made by throwing the positive picture of a glass slide ruled into squares upon the preparation under the microscope in such a manner that by means of an objective micrometer each space in the field was made to accurately measure 0.1 mm. square. The cells present in the same number of squares in ten serial sections, all of which were 10 μ. thick, were then counted and the sum, divided by the number of squares counted in each section, would equal the number of cells in a cube of 0.1 mm. of cortical substance.

NEW REGULATIONS FOR PRACTICE OF DENTISTRY IN NEBRASKA.

An almost entirely new law has been passed in Nebraska, regulating the practice of dentistry. First of all, it requires that a certificate therefor shall be obtained from the State Board of Health and recorded with the clerk of the county in which the dentist is to practice. In the discharge of its duties, in this connection, the board is to be assisted by three secretaries whom it shall appoint from a list recommended by the State Dental Society. These secretaries will conduct the examinations provided for, a part at least of which examinations must be in writing and remain in the hands of the secretaries, open to the inspection of any and all persons for one year. But a graduate from a reputable dental college or university may, on presentation of his diploma and affidavit that he is the lawful possessor of the name, be given a certificate to practice if he shall, upon investigation of the diploma and affidavit, be found entitled to practice.

The term, "reputable dental college or university," is to be defined as: dental college or university re-

quiring a preliminary examination for admission of its course of study and which requires as requisite for the granting of a dental degree, attendance on at least three courses of lectures of six months each, no two of said courses to be held within one year, and having a full faculty of professors in all different branches of dental education, to-wit: anatomy and oral surgery, physiology, chemistry, materia medica, therapeutics, operative dentistry and prosthetic dentistry and clinical instructions in the last two named: *Provided*, that this three year clause shall not apply to degrees granted prior to July, 1892.

Any person shall be regarded as practicing dentistry within the meaning of this act, who shall profess to or perform any operation usually considered as belonging to the practice of dentistry: *Provided*, that nothing in this act shall be so construed as to prevent physicians or surgeons from extracting teeth: *And provided*, that *bona-fide* students in dentistry shall be permitted to perform operations under the immediate supervision of their preceptor. If, for such operations any fee or compensation be received, either directly or indirectly, then such person shall no longer be considered a student and he or she shall conform to all the provisions of this act.

Certificates shall be refused to persons guilty of dishonest and dishonorable conduct; and they may be revoked for like causes. But the person must first be given an opportunity to be heard in his or her defense.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Among the active, progressive and special associations of this country, the Southern Surgical and Gynecological Association takes a high rank. The excellence of its scientific work, year after year, has attracted marked attention both at home and abroad. This Association will hold its eighth annual meeting in the Hotel Shoreham, Washington, D. C., November 12, 13 and 14, under the presidency of DR. LOUIS MCLANE TIFFANY, of Baltimore. Thirty-seven papers are listed to be read, many of the authors of which are men of national reputation, whose contributions to gynecological and surgical literature have reflected luster upon the profession.

The Washington Obstetrical and Gynecological Society will give the Association a banquet on the first evening of its meeting. On the evening of November 13, DR. JOSEPH TABER JOHNSON will tender the members and their guests a reception at his residence.

The JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, as usual, will publish a fair abstract of its proceedings.

Dear Doctor:—Please direct the attention of your friends to *our* JOURNAL. We will be pleased to send sample copies to any names you may suggest.

CORRESPONDENCE.

Ectopic Gestation.

TOLEDO, OHIO, Nov. 1, 1895.

To the Editor:—Dr. D. von Ott at Petersburg, in Russia, has recently published his clinical and experimental observations concerning ectopic pregnancy. Of the most importance for the practitioner I consider his thoughts regarding therapeutics, and therefore I wish to lay out his conclusions.

Wherever the diagnosis of an uninterrupted extra-uterine gestation is positively made, the extirpation of the ovary by laparotomy is indicated. If the patient has reached the second half of pregnancy, we may, if the mother demands it, delay operation until the fetus can be considered able to live, although great dangers are connected with this risk.

If pregnancy is advanced to first and second months only, and the further development now stopped, that means if the fetus is dead, we may restrict our therapeutic action to close observation of the patient. If gestation is farther advanced and the fetus dead, extirpative treatment is still allowed, although the prognosis is less favorable and although the final cure demands rather a long time. A relative indication for operative interference, we therefore find here also, which in general should be preferred. Even if the extra-uterine pregnancy does not offer any alarming symptoms, as hemorrhage or acute inflammation, which naturally would demand operation, it very often interferes with the welfare and health of the woman. Extirpation four to six weeks after death of fetus should be done, if there is no tendency to quick resorption. At this time the placental vessels are obliterated, which condition does away with the danger of hemorrhage.

If the ovum is not removed, resorption should be favored by massage and electricity, carefully applied.

Hematocele, produced by ectopic gestation, should be removed by laparotomy, because this is the only way to satisfactorily remove the condition. In case of suppuration and putrefaction, the operation should be made from the vagina.

The results of the author are good ones; in twenty-one laparotomies one death which is a mortality of 4.8 per cent.

B. BECKER, M.D.

Pan-American Medical Congress, and the Journal.

COLORADO, TEXAS, Oct. 30, 1895.

To the Editor:—I see in JOURNAL just received, notice of "Transactions of the First Pan-American Medical Congress" recently published. I was a member of the Congress from Texas, and paid $10 dues. Am I entitled to copy, because of this fact, or will I have to buy it?

I congratulate you on your signal success in the management of the JOURNAL. It is now in every respect the equal of any published, and may you stay with it.

Very truly yours,

P. C. COLEMAN, Pres. T. S. M. A.

ANSWER:—The copy reviewed by the JOURNAL was an advance copy sent by President Pepper for notice. We have no doubt the members will receive their copies in regular course of distribution. Thanks for words of encouragement.

A Western Opinion of the Journal.

FROM ONE OF THE STATE BOARD MEDICAL EXAMINERS.

DENVER, COLO., Oct. 15, 1895.

To the Editor:— . . . . . Let me congratulate you upon the great improvement in our JOURNAL recently. I feel sure that its tone comes more nearly meeting the approbation of the part of the profession which it should reach, than if gotten up in more popular "crossroads" style.

Yours very truly, J. N. HALL, M.D.

BOOK NOTICES.

Pioneer Work in Opening the Medical Profession to Women. Autobiographical Sketches, by DR. ELIZABETH BLACKWELL. Cloth, pp. 264. London and New York: Longmans, Green & Co. 1895.

This book is unique, because it is the autobiography of one of the leaders of the movement by which women were admitted to the general medical profession. Indeed, we might say the leader, for Dr. Blackwell was the first woman admitted as a student to the general classes in medicine, the story of which is told in the appendix to this work in a very interesting manner by Dr. Stephen Smith, of New York. While women were freely admitted to practice obstetrics and gynecology, as did Louise Burgeois and Madame La Chapelle, yet they were kept aloof from general medicine and surgery until the opening in our day to women of medical classes and the establishment of medical colleges exclusively for women. The story of her early years while earning money for study and studying in America, takes up the first three chapters. Chapter IV is given to the story of her study in Europe, its difficulties and trials. Chapter V to her practical work in America. Chapter VI, a revisit to England and the return to New York, and the last and seventh chapter, her final return to England.

As the period of medicine covered in this autobiography from 1821 to 1869 is among the most interesting in the history of medicine, so this book, which gives occasional curious glimpses of interviews with the great men who occupied prominent positions in the earlier half of the century, is full of interest. In our day we can hardly imagine the annoyance, not to say insults, that the woman medical student was compelled to submit to in order to gain a medical education, and one can only wonder in reading the book of Dr. Blackwell at the patience, the endurance, and the single-heartedness which enabled her to complete her course; at the same time, it is seen that among the many rebuffs which were encountered were many pleasant experiences which had, we suppose, a soothing effect under the irritating influences to which she was frequently subjected. Now that woman has come into medicine to stay, we trust that she will not forget that the men have practiced medicine and have gained honor and success in its practice, not because they were men, but because they were thoroughly equipped in the great principles of an honorable profession, and if women succeed everywhere in this calling it will be in exact proportion as they thoroughly equip themselves for the business, rather than because they are women.

One beginning the book is hardly likely to lay it down until it is finished. The anecdotes told are interesting, and among them is the following (pp. 194 and 195): "My first medical consultation was a curious experience in a severe case of pneumonia in an elderly lady. I called in consultation a kind-hearted physician of high standing, who had been present in Cincinnati at the time of my father's fatal illness. This gentleman, after seeing the patient, went with me into the parlor. There he began to walk up and down the room exclaiming: 'This is a most extraordinary case. Such a case never happened to me before. Really, I do not know what to do.' I listened to him with surprise, although he was very much perplexed, as it was a clear case of pneumonia, and had no unusual degree of danger, until I at last discovered that this perplexity related to me, and not to the patient, and the propriety of consulting with a lady physician. I was both amused and relieved. I at once assured my old acquaintance that it need not be considered in the light of an ordinary consultation, if he were uneasy about it, but as a friendly talk. Finally, he gave me his best advice, and my patient rapidly got well. Happily enough afterward, I had no difficulty in obtaining necessary consultation from the members of the medical profession."

Functional and Organic Diseases of the Stomach. By SIDNEY MARTIN, M.D., F.R.S., F.R.C.P., etc., with 57 illustrations. Cloth, 498 pages. Edinburgh and London: Young J. Pentland. Philadelphia: J. B. Lippincott Company. 1895.

The English teachers have always had a high standing as physiologists, and have excelled in it as the Scotch have excelled in pathology, and we have no hesitation in saying that since the famous books of Thomas King Chambers, no book dealing with stomach digestion and its derangements and the lesions of the organ itself has been more complete or more thorough in its treatment of the subject. The typographical execution of the work is excellent, and the illustrations are all good, and some of them very fine. The book is divided into sixteen chapters, as follow: I, Anatomy and Physiology of the Stomach; II, Digestibility of Various Articles of Diet and the Effect on Digestion of Food Exercise, as Condiments, Alcoholic Drinks, Tea, etc.; III, Pathology of Indigestion of Food; IV, Pathology of Indigestion of Food Continued; V, Methods of Examination of the Functions of the Stomach in Disease; VI, Symptoms Referable to Indigestions of Food with or without Anatomic Changes in the Walls of the Stomach; VII, Functional Disorders of the Stomach; VIII, Mechanical and Active Congestion of the Stomach, Gastritis, Gastric Catarrh; IX, Gastritis Toxica, Gastritis Mycodica, Atrophy and Degeneration of the Stomach; X, Treatment of Acute and Chronic Affections of the Stomach; XI, Treatment of Acute and Chronic Affections of the Stomach Continued; XII, The Same Continued; XIII, Bleeding from the Stomach, Hematemesis; XIV, Dilatation of the Stomach, Cirrhosis Ventriculi; XV, Ulcer of the Stomach, Acute and Chronic; XVI, Cancer of the Stomach.

While the treatment by electricity and hygienic measures are noted, nothing whatever is said of the operative treatment in cases of carcinoma or tumors of the stomach, the work being confined to the medical aspects of the subject.

Text-book on Forensic Medicine and Toxicology. By ARTHUR B. LUFF, M.D., B.Sc., London. Lecturer on Medical Jurisprudence and Toxicology, St. Mary's Hospital; Examiner in Forensic Medicine, University of London; External Examiner of Forensic Medicine in the Victoria University; Official Analyst to the Home Office. London and New York: Longmans, Green & Co. 1895. The work consists of two volumes, pp. 416 and 360 respectively.

This work has been written as a text-book for students of medicine, and as a work of reference for practitioners in connection with medico-legal cases. Special reference is given to toxicology. There are twelve full-paged plates and twenty-four illustrations in connection with the toxicologic branch of the subject. The contents of the volume are as follow: Chapter I, Medical Evidence, Importance of Knowledge of Medical Jurisprudence, Dying Declarations, Procedures in Magistrate's Court, Coroner's Court, Court of Assize, Attendance of Witnesses, Common and Expert Witnesses, etc. Chapters II, III, IV, V, VI and VII are devoted to questions connected with the dead body. Chapter VIII, the general subject of toxicology, and IX, X, XI, XII and XIII to inorganic poisons; Chapters XIV, XV, XVI, XVII, XVIII, XIX, XX, XXI, XXII, XXIII and XXIV to organic poisons. The book is well printed and the illustrations are excellent. The tests given are those recommended in the latest works on chemistry, and many of the procedures are drawn from the personal experience of the author. In examining the book we are inclined to think that the portion relating to toxicology would be of most interest to the American profession, as the procedures of the English courts differ in many important respects from those prevailing in this country. However, the general principles of the English common law prevail in this country in the absence of any statutory provision. We commend the work.

Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. Vol. LXXVIII; second series, Vol. LX, pp. 298. London: Longmans, Green & Co. 1895.

The contents of this volume include, beside the usual list of officers, trustees, reports of committees, lists of Fellows and proceedings at the annual general meeting, the following papers: Surgical Treatment of Diffuse Septic Peritonitis with Successful Cases, by C. B. Lockwood, F.R.C.S.; A Case of Actinomycosis Extensively Involving the Skin, by J. J. Pringle, M.D., F.R.C.P.; Treatment of Respiratory Affections by means of Large Medicinal Injections through the Larynx, by Colin Campbell, M.R.C.S.; A Year's Experience with the Use of Silver in Surgery, by Arbuthnot Lane; Influence of Heredity in Phthisis, by J. Edward Squire; Illustrations of Some Modes of Death after Ovariotomy, by John D. Malcolm; Varieties of Intestinal Obstruction Dependent upon Questions, with a Series of Cases, by Mayo Robson; On Nervous Symptoms and Morbid Changes in the Spinal Cord in Certain Cases of Profound Anemia, by James Taylor; A Case of Large Pelvic Hydatid Successfully Treated by Perineal Incision and Drainage, by Reginald Harrison; On the Probable Pathologic Identity of the Various Forms of Acute Septic Inflammations of the Throat and Neck, by Felix Simon; Microörganisms in the Healthy Nose, by Sinclair Thompson; Further Observations on the Development of Mammary Functions in the Skin of Lying-in Women, by Francis Henry Champneys, and Anthony A. Bowlby; Fourteen Cases of Intra-peritoneal Rupture of the Bladder with Recovery, by W. J. Walsham; With Table of Twenty Cases of Rupture of the Bladder Treated by Suture, by W. Ernest Miles.

As most of these papers and addresses have been published elsewhere, we can only refer those of our readers who have not seen them to the volume itself, which will be found equal in interest to any of its predecessors.

Medical Diagnosis with Special Reference to Practical Medicine in Regard to the Knowledge and Discrimination of Diseases. By J. M. DaCosta, M.D., LL.D., etc., illustrated with engravings on wood. Eighth edition, revised. Cloth, pp. 1104. Philadelphia: J. B. Lippincott Co. 1895.

In a preface to the eighth edition the author states, under date of August 8, 1895, that he has "revised the work and altered some of its chapters. New matter has been inserted, old matter in parts condensed. I have endeavored to incorporate whatever of bacteriologic interest appeared to be established as valuable for diagnostic purposes."

This well-known text-book requires but little at the hands of the reviewer, and it is pleasing to note that this is a *bona fide* revision, as the references at the foot of the pages readily show. In this revision we have the mature opinions of the distinguished author in the ripeness of his vast experience, and this revision will enable it to maintain its place in the front rank of the works on general diagnosis and a credit to American medicine. Aside from the intrinsic merits of the book, there are many features which go to make a favorite; among them may be mentioned, first of all, its clearness of definition, the philosophic explanation of underlying principles, and its brevity of statement, the latter a characteristic too frequently unknown in medical literature. The book has been brought quite up to date, and, as before mentioned, is an actual revision. It includes everything of value on the subjects within its scope.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences Throughout the World. Edited by Chas. Sajous, M.D., and seventy associate editors, etc., illustrated with chromo-lithographs, engravings, in five volumes. Philadelphia, New York and Chicago: F. A. Davis Co., publishers. 1895.

The editor in the preface pays fitting tribute to the memory of Dujardin-Beaumetz, who was the former editor of the Section on General Therapeutics and Pharmaceutical Chemistry. This work is the prince of medical annuals, and he who possesses it has at his command nearly all that is valuable in the medical literature of the world within the year. Naturally the editors differ in their treatment of the various topics assigned to them, but, in general, it may be said that the work is accomplished fairly and without personal bias or leaning. The work is invaluable to the writer and teacher as giving a summary of the more important articles on each particular subject, and by the careful system of reference they may consult the original, if they so desire. The Annual has now come to be a permanent and valuable feature in universal medical literature.

Manual of Operative Surgery. By Louis A. Stimson, B.A., M.D., etc., and John Rogers, B.A., M.D., etc. Third edition, with 334 illustrations, pp. 598. Philadelphia: Lea Bros. & Co. 1895.

This book is a fair compilation of the existing practice on operative surgery of the more common operations. The illustrations are in the main excellent, but certain of them, however appropriate they may have been ten or fifteen years ago, have now become obsolete and might well be omitted, such as, for instance, Petit's tourniquet and its method of application. The book is printed on excellent paper, and it will be found useful for students.

SOCIETY NEWS.

Section on Ophthalmology, College of Physicians of Philadelphia.—A stated meeting of the Section on Ophthalmology was held in the Lower Hall, College of Physicians of Philadelphia, on April 16, 1895, Dr. Wm. F. Norris, Chairman, presiding. Present, Drs. Fenton, Hansell, Harlan, Norris, Oliver, Randall, Risley and Stahl, Fellows of the College, and Drs. Archer, Cassell, Cummings, Murphy, Pancoast, Perrine, Seaman of Milwaukee, Schwenk, Stevens and Ziegler as guests.

Dr. Geo. C. Harlan showed a case of irideremia in a 24-year-old colored woman, in which there was the usual cataractous condition of the lenses. He stated that it was his purpose to endeavor to better vision by needling. In answer to an inquiry by Dr. Randall, whether the case presented any hereditary taint of a similar nature, Dr. Harlan asserted that no such influence could be found in this instance.

Dr. Wm. F. Norris reported a case of leuco-sarcoma of the choroid producing secondary glaucoma, and made some remarks upon the preservation of the specimen in formol. Examination showed that the pressure symptoms had advanced sufficiently far to give rise to a pathologic excavation in the optic nerve head. As regards formol, he stated that although the drug produced a marked shrinkage in the specimen, yet the great advantage that this material possessed over other preservatives was that the tissues were not stained nor discolored. He had found that most excellent sections could be prepared in four or five days after the first immersion.

Dr. Charles A. Oliver made some remarks upon a case of essential atrophy of the conjunctiva and showed a water color sketch of the external condition. He desired to place this special type of case upon record on account of its extreme rarity.

Dr. S. D. Risley read the notes and exhibited a sketch of opacity of the cornea simulating lead deposit. The case was of extreme interest as having given a definite history of the prolonged and continuous use of a solution of acetate of lead. Careful analysis made by a competent chemist failed to reveal any trace of any salt of lead.

Dr. Harlan asked, in view of the fact that there were so many reported cases of clinical evidence of lead depositions, whether there were any instances in which chemic examination had revealed the presence of lead in the opacity?

Dr. Risley stated in answer, that he had not found any in the literature at his command.

DR. HARLAN exhibited a case of embolism of the central retinal artery, in which a large hemorrhage appeared during examination.

DR. RISLEY spoke of having seen a case of retinitis albuminurica in which, while the patient was sitting in his office being examined, a bright red hemorrhage appeared in the lower part of the fundus. This increased in size, while he was looking at it. After instillation of cocain into the eye, so as to better observe the condition, he had full opportunity to watch the blood spread over a large portion of the lower part of the fundus as a thin membranous veil. He watched this extravasation of blood at intervals for several weeks' time. The eye-ground showed numerous other striated hemorrhages and plaques that are so characteristic of albuminuric retinitis.

DR. HANSELL stated that although never having seen the actual appearance of such hemorrhages, yet he had frequently seen cases in which fresh extravasations had appeared during the intervals between the daily examinations.

DR. NORRIS noted an unusual case which had come under his observation some years previously. The patient, a middle-aged woman, while sitting in church, noticed the appearance of a reddish black spot before her eye. Examination upon the following day showed the presence of a large fresh hemorrhage, which covered the entire macular region and extended into the vitreous. The extravasations gradually disappeared and vision returned to normal. Dr. Norris stated that the interesting point in this case was the fact that the patient began to lose her sight when she was not making any special physical exertion.

DR. FENTON stated that he had had the opportunity of twice noticing the onset of retinal hemorrhages in a case of albuminuric retinitis which was under his repeated observation for several hours daily for sixteen days. He also called attention to the fact that he had frequently observed the appearance of fresh hemorrhages after intervals of a few hours.

DR. OLIVER gave a blackboard demonstration of two cases of subconjunctival dislocation of the lenses, occurring in the same week. Both lenses were removed and the eyes were fast becoming quiet and well, with recovery of useful vision. To an inquiry by Dr. Harlan whether the capsules were ruptured in these instances, Dr. Oliver said that they were not.

DR. NORRIS stated that he possessed a specimen of such a dislocation of the lens in which it could be plainly demonstrated that the capsule was intact.

The Section then went into executive session. Upon motion, adjourned.

CHARLES A. OLIVER,
Clerk of Section.

SELECTIONS.

Concerning the Relations of Tuberculosis of the Cervical Lymphatic Glands to Tuberculosis of the Tonsils.—Krückmann (*Virchow's Archiv*, Bd. 138, p. 534) confirms the observations of Hanau-Schlenker. In thirty cases of lung tuberculosis, there was tuberculosis of the tonsils twelve times. An apparently primary tuberculosis of the cervical glands can also develop from the tonsils, even when the clinical examination fails to demonstrate the presence of pulmonary tuberculosis. In one case there was tuberculosis of the tonsils and the mesenteric glands only. This was presumably due to ingestion of bacilli with the food, the bacilli becoming localized in the organs that especially receive and retain foreign elements, while the mucous membranes themselves did not become infected.

Alumnol in Gonorrhea.—(M. Chotzen in Archiv für Dermatologie und Syphilis, 1895, Bd. XXXI, Hft. 2). Chotzen has tried alumnol in 294 cases of gonorrhea and, in opposition to Casper and Sumter, has obtained favorable results. He insists that it has power to destroy the gonococci, and that since its precipitate with albumin is soluble in excess of albumin, it penetrates the tissues and acts as a strong astringent. It was first used in a 1 to 2 per cent. solution, after the disappearance of the gonococci in .5 to .25 per cent. solution, in the deep urethra in 1 to 5 per cent. solution or 2.5 to 10 per cent. ointment. Records of the cases were carefully kept, and conclusions are drawn that in most cases the gonococci rapidly disappear and that the urethritis, no longer gonorrheal, subsides.—Jadassohn, in *Centralblatt für Chirurgie*, July 27, 1895.

Toxin of Erysipelas in Sarcoma of Palate.—The patient, 16 years old, had a sarcoma which started in the soft palate and had spread forward into the hard palate and downward into part of the posterior pharynx, the base of the tongue and the entrance to the larynx. The new formation consisted of a luxuriant cauliflower-like growth, ulcerated on the surface. The uvula was destroyed. The microscope showed it to be a spindle-celled sarcoma. Subcutaneous injections of a mixture of the toxins of erysipelas and bacillus prodigiosus were employed. After the injection there was always redness and a painful swelling for twelve to thirty-six hours. Two weeks after beginning this, swallowing ceased to be painful; cicatrization took place gradually and the tumor wholly disappeared.—*St. Petersburger Medicinische Wochenschrift*, July 27, 1895.

Saccharomyces Hominis.—Busse, of Greifswald, at the last meeting of *Gesellschaft Deutscher Naturforscher und Artzte*, held in Lübeck, Sept. 16–25, 1895, (*Deutsche Med. Wochenschr.*, Oct. 3, 1895) described a disease which presented the clinical picture of a chronic pyemia and which was due to a member of the group of microörganisms known as saccharomyces or yeast fungi. During the course of the disease which extended over thirteen months, foci of disease as large as a fist or so, appeared in the left tibia, the right ulna, the sixth left rib, in both kidneys and in the spleen; there were also large ulcers upon the skin of the faces.

Treatment of Chronic Constipation by large Enemata of Oil.—Dr. Carl Berger has obtained most successful results in obstipation from the "oil-cure" described by Fleiner of Heidelberg in 1893. Enemata of 400 to 500 cc. of good olive or poppy or sesame oil are used. The oil should be at body temperature and given slowly with moderate pressure. Fleiner recommended the dorsal position with elevated pelvis, but Berger now prefers the knee-elbow position. The operation takes twenty to thirty minutes. Then the patient lies, with hips raised, fifteen minutes on the left side and the same time on the right side. All patients feel the pressure of the oil in the transverse colon. Pain was present in only two out of forty-one cases, and twice the taste of oil was reported several hours after the enema. If the patient remains recumbent, a stool usually appears four or five hours later, but the real effect comes the following day in two or three spontaneous evacuations, often containing bile. Oil appears in the stools for five or six, or even ten days. Usually a spontaneous evacuation follows for a number of days, aided, no doubt, by proper care in choice of food, etc. Before further use of the oil, Berger waits until a necessity arises, when the enema is repeated. He finds that the intervals grow longer and that the ultimate success in even severe cases is greater than he has obtained by any other means. Rosenheim has published his experience and while less sanguine, recommends the procedure in connection with massage and electricity. Blum has noted good results in colic accompanying gall stones. The ease with which good results were obtained in hysterical and neurasthenic women makes Berger warm in his praise of this method, in comparison with massage of the abdomen, hydrotherapy or faradization of abdominal wall.—*Deutsche Medicinische Wochenschrift*, July 25, 1895.

The Toxin and the Antitoxin of Cholera.—Under the direction of Behring, Dr. Ransom had previously experimented with the view of obtaining the contagion of cholera in solution and the specific antitoxin and had already proved the existence of the two. Then Behring was offered an experiment station for his assistants at the Farbwerke in Höchst, now marked as the seat of valuable advance in the work of obtaining antitoxins for two diseases, tuberculosis and cholera. As to cholera, Behring says the purely scientific work can be regarded as finished through the researches of Dr. Ransom, and it only remains to prepare a cholera heil-serum

suited to practice. Dr. Ransom gives details of his experiments in which he obtained from virulent cholera cultures a fluid free from bacteria and equally fatal to guinea pigs, and then a dry, stable substance having the same power. Then guinea pigs, etc., were treated according to known methods of immunization to obtain an antitoxin. Serum from these animals was found to afford protection to guinea pigs receiving injections of the cholera toxin, even when the dose was made three times the ordinary fatal amount, and alike whether the dry toxin, the clear solution from cultures or the living vibrios were used, and even when the toxin was used 48 hours after the antitoxin. Dr. Ransom gives a resumé of his researches as follows: 1, it is possible to obtain a cholera culture fluid, free from bacteria, which shows specific qualities; 2, the post-mortem appearances which result from this fluid are similar to those which follow the use of living cholera vibrios; 3, from this fluid can be obtained a stable substance the action of which is identical with that of the original fluid; 4, from animals susceptible to cholera, which have been treated with cholera toxin, a serum can be obtained, which proves to be equally effective against cholera toxin and against the living cholera vibrios.—*Deutsche Medicinische Wochenschrift*, July 18, 1895.

Congenital Syphilis and Tuberculosis.—Hochsinger (*Wiener Med. Blatter*, 1894, Nos. 20 and 21), concludes that syphilis and tuberculosis can appear as a mixed infection at the earliest possible age, and that this infection may be congenital. This conclusion is based on the clinical and anatomic investigation of three cases. The first child born of a syphilitic father and a tuberculous mother died on the thirty-first day. During life an undoubted syphilitic cutaneous eruption existed, and a simultaneous pneumonia with enlargement of the spleen and the liver led to the diagnosis of syphilis. The post-mortem examination showed an extensively distributed tuberculosis of the internal organs with large and caseous nodules that contained the tubercle bacilli. The second case concerned a child that died on the thirty-eighth day. The history, the syphilitic eruption, and a pneumonia seemed to warrant the diagnosis of syphilis. The lung was the only tuberculous organ in this case. The third case presented pronounced syphilitic lesions and died during the sixteenth week from pneumonia. The section showed a chronic tuberculous broncho-pneumonia, tuberculosis of the spleen, of the lymph glands and interstitial syphilitic hepatitis without tuberculosis of the liver. Hochsinger regards such cases as not uncommon and lays stress upon the necessity of examining the contents of the nodules for bacilli, in order to determine whether syphilis or tuberculosis is present. The question whether the tuberculosis was congenital or acquired in these cases can not be determined in Cases 2 and 3. Of the first case it may be said with certainty, however, that the syphilis was the result of a spermatic or paternal infection and that the tuberculosis was due to a placental infection, because the caseous masses with tubercle bacilli in the liver speak in favor of infection through the umbilical vein.

Goitre Among the Indians of the United States.—First Lieutenant and Assistant Surgeon Munson, U. S. Army, contributes an interesting and timely article concerning the prevalence of goitre among certain Indian tribes.[1] Munson obtained a great deal of information in regard to this subject by means of a series of questions sent to the physicians of the sixty-three agencies of the Indian service, all of whom responded except three. It was found that the number of Indians located on reservations from which goitre was reported amounted to 77,173, and that among this number there were 1,823 cases of bronchocele or about 2.36 per cent.; taking into consideration the population of all the reservations from which positive as well as negative reports were received the percentage would be 1.23. As regards geographic distribution the disease is most prevalent in the southern part of Montana. There seems to be no question but that racial predisposition to goitre is illustrated by the Indians because the disease was reported as practically unknown among the white settlers living in or about the reservations where goitre was prevalent among the Indians. It seems also that fully 80 per cent. of the cases occur in Indian females, the disease being not only much less frequent but also less rapid and less extensive in the male. The average age for the disease to begin was found to be at from 12 to 14 years. Nearly every report gives instances illustrating the apparent heredity of goitre and many instances are cited in which several consecutive generations showed its development. It is very interesting to observe that only one case is reported in which goitre was associated with cretinism. The following are some of the other salient points of this article: goitre among the Indians can not be traced to high altitude, climate or water containing an excess of calcium salts; the disease is undoubtedly caused by unsanitary surroundings, depressing constitutional conditions, and an improper and excessively nitrogenous diet; the tumor is apparently smaller than the one usually observed in whites; the usual treatment is not satisfactory.

[1] New York Medical Journal, Oct. 26, 1895.

The Diagnosis of Syphilomata.—How are syphilitic sarcomata and lymphomata to be distinguished anatomically and clinically from other sarcomata and lymphomata? (v. Esmarch at the Twenty-fourth Congress of the German Society for Surgery, April, 1895.) It is a well-known fact that tumors often appear, which are due to constitutional (acquired or inherited) syphilis and which disappear after appropriate internal treatment; but since they can be easily mistaken for other malignant tumors (sarcomata, carcinomata), they often lead to unnecessary operations. In his own practice more than forty cases had appeared, in which tumors, at first regarded as malignant sarcomata or carcinomata, were shown to be undoubted syphilomata. And he has found a far larger number in print, which, in the light of his present experience, he might stamp as suspicious. In this light he would regard: 1, all cases of tumors in patients who showed at any other time symptoms of syphilis, or where the history showed that their parents or brothers or sisters had had syphilis; 2, all tumors, resembling sarcomata, which develop in voluntary muscles, especially in the sternomastoid, in the muscles of the abdomen, the back and the lower extremities, also the tongue; 3, all sarcomata, which, after complete extirpation, recur at first slowly, then after shorter and shorter periods (recurring fibroids, Paget); 4, all tumors, which diminish or disappear after use of iodid of potash, mercury and arsenic; 5, those sarcomata which disappear after attacks of erysipelas or after injections of the toxins of erysipelas, etc. All these grounds for suspicion are strong points in the clinical diagnosis, and the more of these coexist in a given case, the more probable it is that the tumor is of syphilitic origin, the more cautious must the surgeon be, before he determines upon an operation, the more searching must be the examination of the whole body and of the clinical history. In this way it is not rarely that one finds a clue (eruption, ulcers, cicatrices, teeth, eyes, etc.). The external appearance of the tumors and the manner and duration of their growth are so varied that no diagnostic signs can be drawn as a rule. From the anatomic appearance (after extirpation, or removal of a portion) a diagnosis can at times be made at a glance, if one finds in the section the strikingly mottled picture which Virchow has so excellently described. The microscope also discloses much of value, especially negatively. But in many cases syphilomata can not be distinguished, macroscopically or by the microscope, from small-celled and spindle-celled sarcomata. The same is true of exuberant granulomata which sometimes arise from broken-down gummata. But the greatest difficulties in diagnosis are seen in syphilitic lymphomata, which appear, especially as a late symptom, in inherited syphilis, and which are often confounded with tuberculous or pseudo-leucomatous, malignant lymphomata and lymphosarcomata. Syphilomata arise also in other glands, especially in the mamma, testis and salivary glands, and are generally not recognized before extirpation. Inasmuch as all these tumors recur after increasingly shorter periods, until the patients at last succumb, it would be of inestimable value to us, if we had some means, at least by the microscope, of deciding whether the tumor was due to syphilis or

not. That we have to do with bacilli or similar organisms (protozoa) in syphilis we feel reasonably sure from the manner of infection and the whole course of the disease. But unfortunately the labors of investigators, from Lustgarten to Döhle, have not succeeded in establishing beyond doubt. that the microörganisms found are the cause of the infection or are present in all products of syphilis.—*Centralblatt für Chirurgie*, July 6, 1895.

The Pathologic Anatomy of Progressive Muscular Atrophy.—Cramer, of Gottingen, presents a thorough review of the literature of the anatomic changes in the various forms of progressive muscular atrophy (*Centralblatt fur Allgemeine Pathologie u. Pathologische Anatomie*, VI. Band, No. 14–15). He divides all the cases into the following groups: 1, cases without any changes in the central or peripheral nervous system; 2, cases with changes in the peripheral nerves only; 3, cases presenting lesions in the spinal cord; 4, cases with alterations in the brain, and he gives tables embodying the essential facts recorded concerning all the reliable and complete cases of each group published in the literature.

His final conclusions after a careful consideration of all the instances are the following: 1, there are muscular atrophies in which the present means of investigation fail to disclose any lesions whatsoever in the central or peripheral nervous system, even after the atrophy has existed for ten or twenty years. These atrophies correspond clinically to some one of the forms which Erb includes under the name of dystrophy; 2, the muscular atrophies that develop in connection with demonstrable spinal affections present many different clinical pictures. The same complexus of symptoms which is characteristic of dystrophy, as well as typical spinal muscular atrophy may develop in conjunction with the same spinal lesion. Even an isolated disease of the ganglion cells in the anterior horns may give rise to such widely differing clinical manifestations. A special lesion may consequently be present in cases of dystrophy or the peripheral and central nervous system may be found intact; 3, there are found transition forms between the cases without central or peripheral lesions and those with spinal affection, as well as between the so-called spinal muscular atrophies and the atrophies that develop in connection with other diseases of the spinal cord; 4, the changes in the muscles themselves are practically and, on the whole, identical in the atrophies with spinal cord lesions and in the myopathies without central changes. The microscopic changes in the muscles present nothing that is characteristic of any single form of the disease; 5, the pathogenesis of muscular atrophy is not clearly understood. It appears, however, that an embryonal disposition that may become hereditary must be taken into consideration as an etiologic factor. Whether this supposed pathogenic factor that comes into play in embryonal life attacks the nervous system or the musculature directly has not been determined; 6, there are cases of muscular atrophy with an isolated disease of the peripheral nerves which seem to assume an especial type (the neural form of Hoffmann). The muscular changes in this form do not present any essential differences from those of the two other kinds of atrophy mentioned; 7, the muscular atrophies of locomotor ataxia show some similarity to the neural form; 8, there are muscular atrophies dependent upon central lesions which mostly consist of focal changes in the region of the central convolutions. Such muscular atrophies can develop without any visible morbid changes in the pyramidal tracts or in the ganglion cells of the anterior horns.

Treatment of Eclampsia.—By Prof. Dr. A. v. Gurbaroff, of Jurjew (Dorpat). Since the treatment of eclampsia even to-day scarcely permits us to expect favorable results, inasmuch as the death rate for the mother is placed at 25 per cent. (Auvard), or even 30 per cent. (Ahlfeld), the following observations on the six cases of this severe complication, which have been observed since my entrance into the woman's clinic in this city, seem to me to be not without practical interest, since all these cases terminated favorably for the mother. This would lead us to assume a mortality of zero, and I scarcely think it could be shown that the result obtained did not depend upon the treatment. Of the six cases, three presented very severe phenomena, as very high and long continued temperature, protracted comatose condition, large amount of albumin in the urine, frequent convulsions, etc. The treatment was as follows: administration of narcotics, principally morphin, in moderate but repeated doses (.015 gm. subcutaneously about six times in twenty-four hours according to the quantity of urine), enemata of chloral and only during operative maneuvers (including catheterization of the bladder) light chloroform narcosis. All external means which could stimulate or supply vicariously the activity of the skin, were applied freely. Among these, warm baths only very seldom; moist, warm coverings always; further, many times a day, rubbing with warm vinegar-salt-alcohol solution and simple supplying of heated air. In all cases, attention was given as early as possible to securing thorough emptying of the intestines by salines (sodium and magnesium sulphates, ää). Beside, in all cases, great attention was bestowed on the function of the kidneys. This was stimulated by the administration of milk and certain mineral waters, and by application of local heat to the region of the kidneys by means of a large hot water bag, which always exerted a remarkably favorable influence on the secretion of urine. Especially in the three severest cases, in which there was entire loss of consciousness, coma, with high temperature (39, 40 degrees C.), and greatly diminished secretion of urine, the quantity of urine was strikingly increased and the albumin much diminished; coincidently the general condition began to improve and recovery followed after a few days. This result appears to me so exceptional, that I feel justified in recommending strongly the continued local application of heat over the loins, especially in cases in which there is much albumin and markedly diminished secretion of urine. Venesection was employed in only one of these cases. In this case convulsions began at the end of the seventh month and were very severe. The patient was brought into the clinic in a deplorable condition. The eclamptic seizures followed one another rapidly and in the intervals the patient was wholly unconscious. Temperature 38 to 39 degrees, pulse 90 to 112. The os admitted one and one-half fingers; no contractions of the uterus. Abortion was produced. Barnes' dilators were introduced and after four hours the sac was ruptured and a dead child was delivered with forceps. The convulsions continued. Pulse 90, strong; respiration labored and stertorous. Unconsciousness persisted. After eight hours 600 gms. of blood were drawn from the left median cephalic vein. The paroxysms suddenly ceased, respiration improved, there was an increase in the urine and marked diminution in the albumin. Temperature before venesection 38.5 degrees, pulse 76; shortly after 37.8 degrees, pulse 80. On the next day 500 gms. more of blood were drawn. Soon after the patient became perfectly conscious. Albumin disappeared from the urine. On the fifth day symptoms of puerperal mania were manifested, joined with rise of temperature, but these soon passed away.—*Centralblatt für Gynäkologie*, No. 5, Feb. 2, 1895.

The General Therapeutic Effect of the Alternative Electric Current of High Frequency and of High Tension.—Dr. Apostoli, together with Dr. Berlioz, on March 18, 1895, presented a paper on the above mentioned subject to the Academy of Sciences of Paris. He now, after longer and riper experience, desires to present a summary statement of his general conclusions:

1. According to Professor d'Arsonval's discoveries, alternative currents of high frequency and of high tension, exert a powerful action upon all living bodies submitted to their inductive influence.

2. The best method of applying these induced currents is to place the patient, free from all contact with electrodes, in the circuit of a large solenoid traversed by these currents. The patient being thus completely insulated, the currents which circulate in his body by auto-conduction, have their origin in his tissues. The body plays the rôle of a closed induced circuit.

3. By this method the physiologic discoveries of Professor d'Arsonval are confirmed and we are able to prove the powerful influence of these currents upon the vasomotor system—although they produce absolutely no sensation and although they have no apparent effect upon the motor or sensory nerves. These currents have nevertheless a powerful action upon all the nutritive functions; as has been verified by Dr. d'Arsonval's numerous analyses of the gaseous

products of respiration and by Dr. Berlioz's not less numerous analyses of the urinary excreta.

4. The general therapeutic applications to be deduced from this physiologic action are confirmed by clinical observation. Dr. Apostoli has now treated more than a hundred patients by this method at his clinic and at his private consultation rooms. The greater number of these patients have been greatly benefited by this new treatment, which, be it remarked, has been used to the exclusion of all other forms of medication, dietetic or otherwise.

5. The currents exert in the majority of cases a most powerful and generally beneficial action upon diseases due to slackening of the nutrition, by accelerating organic exchanges and combustion. This is proved by analyses of the urine made by Dr. Berlioz, of which the following is a brief resumé:

The quantity becomes more normal; the products of organic waste are better eliminated. The increased combustion is shown by the diminution of uric acid, while the percentage of urea is generally increased. The relative proportion of these two substances changes under treatment so as to reach in general the figure of 1-40. The elimination of the mineral products is also changed, but in a manner less marked.

6. When daily séances are given, each lasting fifteen minutes, we may generally observe in patients submitted to the influence of these currents the following modifications in their general condition. We mention them in the order of their occurrence: return of sleep. Increase of strength and vital energy. Increase of gaiety, of power for work and ability to walk. Improvement of appetite, etc. In short, general progressive improvement. This general improvement often manifests itself after the first séances before any local influence is apparent and before any change has occurred in the urinary secretions.

7. Local pain and trophic changes are often more slowly affected by these currents and at times they are entirely refractory for a longer or shorter period. In such cases the same currents must be applied locally by contact with the electrodes. This subject will be treated later on in a separate communication.

8. The diseases which have appeared incurable by this treatment are those not associated with well defined organic changes such as hysteria and certain forms of neurasthenia. Dr. Apostoli has also observed that certain localized neuralgias are refractory to this form of currents; they require its more direct local application.

9. The diseases which have derived most benefit from this therapeutic agent, belong to the arthritic class: rheumatism and gout.

10. In certain diabetic subjects the sugar has disappeared altogether from the urine under the influence of these currents, while in others there has been no such change, notwithstanding the manifest and constant improvement in the general condition. Is this difference due to the imperfection of the electric apparatus or to the manner of its application? It is hoped that further experience will soon afford an answer to this question; although the fact that diabetes has many different causes, may in itself explain the difference in the results obtained by this treatment.

In conclusion, the currents of high frequency and of high tension introduced into electro-therapeutics by Dr. d'Arsonval greatly increase the field of action of medical electricity. They furnish general medicine with a new and valuable means of treatment, capable of modifying more or less profoundly the processes of nutrition.—(Abstract of a paper read before British Medical Association, 1895.)

PUBLIC HEALTH.

Typhoid Fever.—In Connecticut, New York, Pennsylvania, Ohio, Michigan, District of Columbia and Chicago, typhoid fever has been unusually prevalent. It is probable that in Pittsburg and Allegheny the disease has been more severe according to population than most of the other cities. With the advent of cold weather, however, the disease will become less serious, and in Chicago it has already markedly diminished.

To Regulate Undertaking.—A law has been passed in Pennsylvania to provide for the better protection of life and health by diminishing the danger from infectious and contagious diseases through the creation of a State board of undertakers in the cities of the first, second and third classes, with systematic examinations, registrations, and licenses for all entering the business of burying the dead. With the exception of a special provision made for persons now engaged in the business of undertaking, applicants for licenses must be examined by the board and found to be possessed of good moral character, skill and knowledge of the business of undertaking and have a reasonable knowledge of sanitation, preservation of the dead, disinfecting the body of deceased persons, the apartment, clothing and bedding in case of death from infection or contagious diseases. All persons receiving a license from the State board of undertakers, shall also register the fact at the office of the board of health at the city in which it is proposed to carry on business. But nothing contained in this law is to be construed to apply to *bona fide* employes of a duly licensed or registered undertaker, or to persons engaged simply as layers out or shrouders of the dead, or to the employes of any cemetery whose duties and business extend no further.

Pasteurization of Milk and Cream for Direct Consumption.—Bulletin No. 44 from the Agricultural Experiment Station connected with the University of Wisconsin, consists of a scientific as well as practical dissertation upon the pasteurization of milk and cream, written by H. L. Russel, and the following conclusions are of direct interest to the physician as well as to the layman: from a hygienic point of view the elimination of living germs from milk is imperative. At present, no better methods have been suggested for this purpose than pasteurization and sterilization. Inasmuch as pasteurized milk and cream conform more closely to the normal fresh product in certain essential particulars than the sterilized, it follows that pasteurization is better adapted for general purposes. The pasteurization of milk or cream consists in heating the liquid to a temperature that is fatal to the vegetating growing bacteria and still not high enough to materially change the physical characteristics of the product. The minimum limit for pasteurizing should be a point at which the tubercle bacillus is killed, and in general an application of heat at 155 degrees F. for twenty minutes may be chosen as a medium standard. Treated in this way, and chilled as quickly as possible after the heating, the destruction of germ life in the milk averages about 99.7 per cent., and the effect of stopping the putrefaction and fermentative processes of so much organic life can not be attended with other than beneficial results.

Tuberculosis in Cattle and the Tuberculin Test.—The close relation between bovine tuberculosis and certain forms of human tuberculosis render all scientific investigations into the condition of dairy cows as regards the existence of tuberculosis of great interest to the physician, to say nothing about the great practical importance of such studies. In Bulletin No. 40 of the Agricultural Experiment Station of the University of Wisconsin (issued July, 1894) are contained the details of results obtained with the injection of tuberculin in the station herd, consisting mostly of milch cows, and at this time it will suffice to say that of the thirty animals inoculated, twenty-two responded or reacted to the test in such a positive manner that there could be no question as to the diagnosis, and this diagnosis was verified in every instance by the post-mortem examination, showing that in this herd there existed a veritable epidemic of tuberculosis. Russel, the bacteriologist to the station, and the author of this bulletin, concludes with the following recommendations as regards the use of tuberculin: 1, that it be employed in herds used for a general milk supply, because here is the main source of danger as regards human infection from the use of milk containing tubercle bacilli. In connection with this, the question becomes pertinent as to how many milkmen supplying large cities, or smaller for that matter, are

ready to furnish a guarantee to their patrons, based on the use of the tuberculin test, that there is no possible chance of disease lurking in the herds furnishing the milk. 2, in dairies producing milk intended for children and invalids, the necessity for the fulfillment of this recommendation needs no emphasis from the physician who knows only too well the great susceptibility of the immature system of the child, or of the enfeebled one of the invalid to tuberculosis, and yet how long shall we continue to prescribe a milk diet without any guarantee of the purity of the milk? This demand can now be met with comparative ease by the dairyman and the consuming public need but say the word that will make it imperative for him to furnish the requisite guarantee. 3, in the purchase of new animals the tuberculin test should be passed successfully by the animal in question. The justice of this recommendation is self-evident from whatever standpoint taken, and it is particularly the duty of the family physician to see to it that this demand is fulfilled whenever cows are purchased by any of his patrons for the purpose of supplying children or invalids with absolutely pure milk. It is quite plain that if the demands for non-tuberculous milk were carried to the extent included in these recommendations, then tuberculosis among cattle would be almost entirely stamped out in the course of time, and it would seem the plain duty of local health departments and of the State Boards of Health to take an active part in educating the public and the medical profession up to a point where the importance of this comparatively simple method of preventing tuberculosis would be fully understood and enforced—by direct legislative means, if necessary.

Health Reports.—The following health reports have been received by the Supervising Surgeon-General, Marine-Hospital Service:

SMALLPOX—UNITED STATES.

New Orleans: October 19 to 26, 18 cases, 3 deaths.
Michigan, Detroit: October 19 to 26, smallpox reported; Rochester, October 19 to 26, smallpox reported; Hamburg Twp, October 23, 1 case.

SMALLPOX—FOREIGN.

Buda-Pesth: October 7 to 14, 1 case.
Cairo: October 1 to 7, 3 deaths.
Calcutta: September 14 to 21, 1 death.
Madrid: October 8 to 15, 7 deaths.
Moscow: September 28 to October 5, 1 case.
Naples: October 12 to 19, 7 cases, 7 deaths.
Nogales: October 19 to 26, 1 case.
Odessa: October 5 to 12, 1 death.
Rotterdam: October 12 to 19, 1 case.
Zurich: October 5 to 12, 3 cases.
Manzanillo: September 1 to 30, 17 deaths.
England, London: October 12 to 19, 1 death.
Dublin: October 12 to 19, 2 cases.

CHOLERA.

Bombay: September 24 to October 1, 1 death.
Calcutta: September 7 to 21, 28 deaths.
Madras: September 21 to 27, 1 death.
Singapore: September 13 to 17, 2 deaths.
Austria-Hungary: October 1 to 7, 19 cases, 18 deaths.
Russia, Dept. of Volhynia: September 15 to 28, 4,269 cases, 1,701 deaths; Dept. of Kew: September 19 to 26, 14 cases, 18 deaths.
Turkey: Constantinople, September 24 to 26, 4 cases, 4 deaths; Hudauendkjar: September 20 to 29, 9 cases, 5 deaths; Diahekir: September 12 to 26, 21 cases, 18 deaths; Maschuk: September 25 to 28, 10 cases, 6 deaths; Mossoul: September 20 to 24, 1 case, 2 deaths.
Formosa: July 28 to August 10, 150 cases, 56 deaths.
Tangier: September 23 to October 2, 197 cases, 142 deaths.
Japan: from outbreak to October 3, 50,431 cases, 34,719 deaths.

YELLOW FEVER.

Cienfuegos: October 14 to 27, 2 deaths.
Sagua la Grande: October 12 to 26, 10 cases, 1 death.
Santiago de Cuba: October 13 to 26, 50 deaths.
Vera Cruz: October 17 to 24, 1 death.
Taribacoa: September 1 to 30, 18 cases.

ASSOCIATION NEWS.

Treasurer's Notice.—The Treasurer has received the following for membership dues with which names were not sent:

$5 (currency). Envelope post-marked Boston, October 27, 10 P.M.

$5 (currency) wrapped in piece of purple paper. Envelope post-marked Los Angeles, Cal., October 30, 1:30 P.M.

$5 check not signed. No. 71, Cincinnati, Ohio, on the National LaFayette Bank.

Any information in regard to the above will be appreciated by the Treasurer, H. P. Newman, Venetian Building, Chicago.

MISCELLANY.

Protonuclein.—Protonuclein is the last of the many substances which is recommended as "a positive and never-failing" cure for cancer.

Correction.—In our issue of October 26, in mentioning the Case Recorder of Dr. Lyon, his address was given as Milwaukee. It should have been 921 Milwaukee Avenue, Chicago.

Antitoxin is Vaccine Virus.—The second definition given by the Century Dictionary for "vaccine virus" is: "In a general sense, the modified virus of any specific disease introduced into the body by inoculation, with a view to prevent or mitigate a threatened attack of that disease or to confer immunity against subsequent attacks." Adopting this meaning of the term, the Board of the United States General Appraisers at New York, decided July 23, 1895, that antitoxin is vaccine virus and as such is exempt from duty under paragraph 664, act of August 28, 1894.

Heredity in Longevity.—The *Dublin Journal of Medical Science* quotes an interesting statement by Sir Benjamin W. Richardson concerning his observations on the duration of life of the offspring as compared with that of the parents. He considers that if the ages of the two parents and of the four grand-parents be added together and divided by six, the age of the case in point will be told with an average variation of not more than two. If the ages of the parents are high, the offspring tends to improve on them; if low (say an average of 40 or lower), the life of the offspring will probably be shorter.

The Hahnemann Monument.—The *Medical Century* (homeop.) says that the sculptor, Mr. Chas. Niehaus of Pittsburg, has the final model of the Hahnemann statue under way and concludes thus: "In this connection it may not be amiss for us to take a little unction unto ourselves because of the success attending our endeavors as monument builders. The Allopathic Association, which is also negotiating with Mr. Niehaus for the Rush monument, has raised $5,000 in two years for their monument. The homeopathists have raised $25,000 in less than a year." We presume our erring contemporary by the term "Allopathic Association" intends to refer to the AMERICAN MEDICAL ASSOCIATION, and although we reject the epithet "allopathic," we must admit the truth of the remainder of the statement.

Treatment Provided for North Dakota Drunkards.—There are several provisions in the law passed by the last Legislature of North Dakota which distinguish it from the enactments of some of the other States on the same subject. Here it is provided that the drunkard is to be sent to a reputable institute, designated by a committee of three persons to be appointed by the Governor. Section 11 of the Act says that it must be some reputable institute for the treatment of such disease, that will treat the same at the lowest figure; but the board of county commissioners shall not be compelled to send him to the institute making the lowest bid

unless, in their judgment, the best interest of the drunkard shall be promoted thereby. Furthermore, his cure and treatment is at all times to be under the supervision of the board of county commissioners, who may at any time they see proper, stop the treatment of any such drunkard, or change him from one institute to another, as to them shall seem meet and proper.

Memorial Hospital, Brooklyn.—On October 30, a new hospital was opened in Brooklyn, the central building and one wing being built and in readiness to take up the work that has hitherto been carried on at 1453 Pacific Street, at a cost of $100,000. According to the plans of the architect, the hospital, when complete will have another wing. The present completed structure has accommodations for the three departments of the institution—the hospital proper, the training school for nurses, and the memorial dispensary. There are accommodations for 100 patients and 40 nurses. The branch dispensary on Bedford Avenue will be maintained as heretofore. From seven hundred to one thousand patients are treated there monthly. The Memorial Hospital for Women and Children was founded in 1883. The plot of ground owned by the hospital comprises an area of not less than 26,000 square feet, in a very eligible location.

Invalid Aid Society of New Mexico.—According to the *Albuquerque* (New Mexico) *Citizen*, of October 25, the following petition is being circulated for signatures throughout the United States, at the instance of the Invalid Aid Society of New Mexico:

To the Honorable, the Senate and the House of Representatives of the United States:

The undersigned, residents of the State of ——, interested in the welfare of the vast numbers who are suffering from pulmonary diseases and other climatic ills in the United States, and believing that the climate of New Mexico is admirably adapted for the alleviation and cure of diseases of the air passages and lungs, respectfully petition your honorable bodies to set aside one or more tracts of land recognized as adapted to such uses, containing 10,000 acres each, to be used as homes and resorts for the benefit of such invalids; the provision for such donation to be incorporated in the bill for the admission of New Mexico as a State.

A Series of Ten Thousand Cases of the Serumtherapy of Diphtheria.—The New York *Herald's* European edition publishes deductions drawn from statistics collected by a Berlin physician, Dr. A. Eulenberg, of diphtheria cases treated with antidiphtheritic serum between Oct. 1, 1894, and March 31, 1895 in private practice. "Out of 10,240 cases of diphtheria reported to him, 5,790 were treated by the antitoxic serum, and 4,450 by other methods. The report says that of the 5,790 that formed the first group 552 died—that is to say, 9.5 per cent; of the 4,450 patients of the second group 652 died—that is to say, 14.6 per cent. The compiler is of opinion, however, that the cases treated by serum were mostly bad cases of diphtheria, while those treated by the other methods were not so serious. This inference is rather confirmed by the report of Dr. Kurth, of Bremen, who had only 6.8 per cent. of deaths among patients treated by serum, but 24 per cent. of deaths among the others." Dr. Eulenberg's statistics show also that the efficacy of the serum treatment is greater when it is begun in the very early stage of the diphtheritic attack. Thus the total death rate among the patients with whom the serum treatment was begun on the first or second day of the attack was only 4.2 per cent., whereas among patients who did not receive an injection of serum until the third day of the complaint, or even later, the death rate was four times as large (16.8 per cent.). In cases of children less than 2 years old, the relative difference in the figures is still marked. In the *Deutsche Medicinische Wochenschrift*, for September 19, appears Dr. Behring's last paper on the progress of serum treatment, entitled, "*Leistungen und Zeile der Serumtherapie.*"

Bicycle Fatigue Utilized.—According to the *New York Medical Journal*, an Italian specialist in otology has undertaken the study of the influence of fatigue on audition. He made examinations of twenty-four bicycle riders after they had ridden thirty-two miles in two hours and a quarter. Two of the men complained of subjective noises only, while in nearly all of them the perception of sound by aerial conduction was less marked than in the normal condition, and the experiment showed negative result. In the riders who were subjected to an examination with tuning-forks, a slight diminution in the perception of loud sounds was ascertained. The competitors were again examined after a rest of from two to seven hours, and in six of them the auditory powers were found to be the same; in two it was not so good, and in the sixteen others it was better; the aerial perception had increased from a few centimeters to a meter and a half. The men in whom the amelioration was most marked, in whom, consequently, the hearing had undergone the greatest change, were those who had had little experience or training. Conclusions: physical fatigue evidently causes a temporary weakening of the auditory power. This fact demonstrates also that the effects produced by great physical exercise are not shown by muscular fatigue only, but they remotely affect the entire organism, and especially the nervous system, while the special senses, on account of the delicacy of their function, are more likely to reveal the effects.

The Dishonest Nurse a Rarity.—An instance of that rare form of culprit—the thievish nurse—has recently been brought to light in Brooklyn. From the editorial page of the *Eagle* of that city the following comments on the case are selected:

"Ethel Oliver, a good looking damsel of 22 years, had made a confession. She has been a nurse in the Seney Hospital, and in that capacity had used her opportunities to steal. She robbed the hospital, she robbed her fellow nurses, she robbed the patients, even as they were dying, and she entered the dead-house to despoil the corpses. She was so rosy and innocent in her appearance that nobody thought of suspecting her. If there is any foundation for believing that a habit of stealing can be a disease, surely this instance seems to support it. There was no urgent need for theft. The young woman was making fair wages, she had clothing and board and shelter, some comforts and even luxuries. She had none of the usual motives that are urged in extenuation of this mean form of crime."

The incident is a sad one and would be an unsettling one, were it not for the fact that such events are of the rarest; it is one of those cases that prove the contrary rule. In hospitals, asylums and in private homes thousands of men and women are employed as nurses, and not one in a thousand is known to violate his or her trust. The advantages for theft are uncommonly ample. The people who may be robbed are helpless, and some are out of their wits, so that they would not know whether they were robbed or not. There are no watchers to oversee the nurses and report on their conduct. They are in a position of absolute power, for the nonce. Yet they almost never presume upon their position and power.

Medical Men in Politics.—The *Boston Medical and Surgical Journal* comments upon the slender influence over wholesome legislation that comes within the power of the medical profession. Doubtless every community has its quota of physicians who are not too much occupied with professional work to give a share of their time to political interests. Doubtless, also, a small proportion is willing to engage in legislative duty if called upon so to do by the community wherein they respectively dwell. But it is unfortunately, also, the case that those who "go to the front," from our profession, for such legislative functions are not from the representative men in medicine; they are ordinarily chosen to represent something bearing upon "spoils" or "bone-hunting." Their interests with the sanitary and medical interests of their constituents are commonly subordinated to relatively small issues. Then, as the *Journal* remarks, the kind of work that is called "political" is, for the most part, distasteful to men of the type who make a success in medical life, and may even be by them regarded as

incompatible with professional success. The *Journal* closes its article by citing an instance which speaks for itself, regarding the kind of selection of a politico-medical representative, that may sometimes be made even in enlightened New England:

"A conspicuous example of the influence of the medical man in politics in retarding legislation for the benefit of the public health, was the attitude taken by Senator Gallinger, of New Hampshire, who had been a medical practitioner in that State, on the bill appropriating money for a bacteriologic laboratory and disinfecting service and for the distribution of antitoxin in the District of Columbia. It will be remembered that his attitude, as noted in our issue of Feb. 7, 1895, was against the passage of the bill, and that his influence was thrown squarely against this legislation for the public health rather than in favor of it. There can be no doubt that there is need of the representation of the medical profession in our Legislatures by the right class of men from the highest ranks of the profession. And inasmuch as active participation in legislative work is impossible for the rank and file of the profession, it becomes the duty and privilege of what may be called the medical leisure class to do this work; we mean those of independent means, who are not dependent upon the practice of their profession for their living."

Senator Gallinger is supposed to be a homeopath and his actions must be viewed from that standpoint.

The Medical College of To-day.—The Boston *Medical and Surgical Journal*, September 26, prints Dr. H. O. Marcy's address before the Syracuse University Medical Department, in June last. Dr. Marcy's subject was "Personal Service as the Especial Exponent of a Great Profession." One of the consequents of this Commencement anniversary, was the raising of a fund of $100,000, contributed largely through the instrumentality of the alumni of the University, to be devoted to the erection of a new building, which is already rapidly approaching completion. Of the old and the new in medical colleges, he spoke as follows:

"The medical college of to-day demands another building, or a series of buildings, than that of the former pattern. The amphitheater as the lecture-room—cramped crowded, stifled in the upper rows; to the last degree inconvenient of access; reached by garret stairs, to descend to seats, as upon an illy-constructed ladder; a nightmare dream of our earlier years—should be relegated to the past. Bright, airy, well-lighted rooms are required, made pleasing and attractive, with good seats and tables, where the personal work may go on under the direction of well-trained assistants. The modern medical college should be so closely connected with the hospital that the clinical teachings may be made illustrative and profitable. Indeed, the hospital should be the *workshop* in the better sense, where the student becomes familiar with the 'living pictures' of our poor broken humanity, the reconstruction of which is to be his future life-long labor. Hospitals are important for the care, especially, of the poor, the home for the friendless. These, the public have long held in kindly interest and support. As a rule, the best physicians of the respective localities have willingly rendered gratuitous service; but the medical college has been too often looked upon as a private affair, a doctor's business venture, entered into for gain. Should it not, the rather, be considered by the public as a *technical school* of the highest order? Within a few days I have examined with some care the Johns Hopkins Hospital in Baltimore, in regard to the advantages offered for the instruction of medical pupils. Here the usual process is reversed. The hospital predominates; but there are laboratories in considerable number with facilities for the teaching of the *science* of medicine, while the *art* is in daily practice in its many splendid wards. The medical college proper is yet to be, but the thought tends directly in the line of small classes, personally trained by competent teachers. These to be competent require special instruction in the art of teaching, now more lacking in medicine than in any of the great departments of science."

Philadelphia Notes.

James E. Garretson, M.D., Professor of Anatomy and Dean of the Philadelphia Dental College and Emeritus Professor of Oral Surgery in the Medico-Chirurgical College of Philadelphia, died of inflammation of the bowels at Lansdowne, October 26. He was born at Wilmington, Delaware, October 1828. He studied and practiced dentistry for several years with Dr. Thatcher of that city; subsequently he attended lectures in Philadelphia and graduated in dentistry in 1857, and two years later he was graduated in medicine at the University of Pennsylvania. He joined Dr. D. Hayes Agnew in conducting the famous Philadelphia School of Anatomy in 1862, and later was made professor of anatomy and oral surgery in the Philadelphia Dental College. He rendered valuable aid in re-organizing the Medico-Chirurgical College and in placing it upon a broad and secure foundation, and for some twelve years was professor of oral surgery in that institution, being made Emeritus on his retirement from the Medical College a year ago. He continued his active connection with the Philadelphia Dental College until his death. He was the author of a text-book on oral surgery and also of works of a popular philosophical and literary character, first published under the name of John Darby. The principal of these are "Odd Hours of a Physician," "Brushland," "Man and His World," and "Nineteenth Century Sense," which gained for him considerable literary reputation. He delighted in the society of students, who held him in such admiration that a Garretsonian Society was formed several years ago, which has met monthly ever since, for discussion of scientific and philosophical questions.

Hospital Notes.

The Naval Hospital of New York harbor, located in the Brooklyn Navy Yard, is now undergoing some very important improvements. The old structure dates back to 1839, and has long been in need of modernizing treatment. Congress has appropriated the sum of $60,000 for its improvement. The changes will consist mainly in improving the interior of the old building, reconstructing most of the wards, and the construction of two new buildings. The principal of these will be of brick, three stories high. It will contain the mess-hall of the convalescents and a private dining room for the officers; a dispensary, and on the third floor a completely equipped operating room. This will have tiled floors, enameled iron furniture and fittings, operating tables of enameled iron and glass, and glass sinks and lavatories. In connection with the operating room there will be a "recovery" room, a sterilizing room and a surgeon's chamber and lavatory.

Society Notes.

The Allegheny Medical Society held a meeting in Pittsburg October 15. The following resolutions were adopted:

Whereas, The sanitary conditions of Allegheny County are objectionable in many respects, and

Whereas, It is believed that methods for their improvement are readily available; therefore, be it

Resolved, That it is the opinion of this society that every reasonable effort should be made to improve the character of our drinking water by removing from it pernicious material which it contains, and by persistent and energetic measures to prevent its pollution.

Resolved, That persons affected with contagious and infectious diseases, including pulmonary consumption, should be subjected to such regulations and restrictions as will afford reasonable protection to the community at large.

Resolved, That all establishments for the propagation of vaccine virus should be subject to the most rigid inspection, and such rules for their management adopted as will best prevail against infection. It is hereby recommended that the vaccine virus distributed by our boards of health shall be subject to such tests as may be practicable against the presence in it of septic material.

The annual meeting of the Military Tract Society was held in Monmouth, Ill., October 18. The following officers were elected for the ensuing year: President, Louis Becker, Knoxville; First Vice-President, C. R. Harrel, Colchester; Second Vice-President, E. J. Mitchell, Roseville; Secretary and Treasurer, O. B. Will, Peoria. The next meeting of this society will be held in Peoria.——The regular meeting of the Kansas City, Mo., Academy of Medicine was held October 26.——The Jasper County Medical Society held a regular meeting at Newton, Iowa, October 30.

St. Louis Notes.

THE ST. LOUIS MEDICAL SOCIETY.—The program for the meeting of October 31 was made up of papers devoted to diphtheria. Dr. Meisenbach discussed diphtheria from a surgical standpoint, and while favoring antitoxin, pointed out the fact that as a practical necessity in many cases, intubation and tracheotomy would still be required. Dr King treated the subject from a medical point of view, and Drs. Martin, W. W. Graves and Sutter gave their experience in the treatment of the disease with the antitoxic serum. The general discussion was most favorable in the light it threw upon the value of the antitoxin, and the majority expressed views in favor of its employment.

THE ST. LOUIS BOARD OF HEALTH now requires that a report of the results of treatment of cases of diphtheria for which it had furnished tubes or serum be made, in order that statistics may be compiled.

Detroit Notes.

THE WAYNE COUNTY MEDICAL SOCIETY.—Looking back upon a year of success, the society enters upon a new year with the following officers: President, E. B. Smith (re-elected); Vice-President, W. R. Henderson; Secretary, T. S. Hough; Treasurer, C. Henri Leonard; Trustees, Drs. W. J. Brand, K. Gunsolus, L. E. Maire, T. J. Parker, O. P. Eaton. The President entertained the society at his home on the evening of the 8th ult. About two hundred were present.

THE DETROIT MEDICAL AND LIBRARY ASSOCIATION.—This organization held its annual meeting on Monday, the 8th ult., when the following officers were elected: President, E. T. Tappey; Vice-President, C. W. Hitchcock; Treasurer, A. P. Biddle; Secretary, W. S. Anderson. The retiring President, Dr. Eugene Smith, entertained the members with a sumptuous repast.

DETROIT GYNECOLOGICAL SOCIETY.—On October 3 this society held its annual meeting, at which the officers for the ensuing year were elected: President, N. W. Webber; Vice-President, Florence Huson; Secretary-Treasurer, R. A. Newman. A banquet followed the business meeting, given by the retiring President, Dr. E. T. Tappey.

DETROIT ACADEMY OF MEDICINE.—The following officers for the coming year were elected at the annual meeting of this body held on Tuesday, October 9. The President, Dr. A. H. Bigg, entertained the members and invited guests at dinner. President, W. R. Chittick; Vice-President, D. La Ferté; Secretary, C. W. Hitchcock. Director for a term of three years, J. E. Emmerson.

PERSONAL.—Dr. W. J. Brand is a candidate for alderman on the Independent ticket. He has running against him both a Democrat and a Republican.

MORTALITY REPORT FOR THE WEEK.—The report of the Health Office shows that during the week there were 107 deaths in the city, 52 being children under 5 years of age; 11 occurred from diphtheria.

BIRTH REPORT FOR THE WEEK.—One hundred and five births were reported for the week, of which 52 were males.

REPORT OF CONTAGIOUS DISEASES.—There are at present 41 cases of diphtheria, of which 28 are new; 9 cases of scarlet fever, 3 being new; 1 case of smallpox.

Louisville Notes.

Edward R. Palmer Memorial Meeting, held in the Alderman's Chamber, City Hall, Louisville, Ky., Oct. 26, 1895, under the auspices of the Louisville Surgical Society. The meeting was called to order by Dr. Geo. W. Griffiths. The Secretary, Dr. Henry E. Tuley, read letters of sympathy, and regrets for inability to attend the meeting from Drs. James Nevins Hyde, Chicago; Lyman Beecher Todd, Lexington, Ky.; Arch Dixon, Henderson, Ky.; John Blake White, New York city; William Judkins, Cincinnati; John A. Larrabee and Ap Morgan Vance, of Louisville. The President then called upon the speakers appointed.

DR. JOS. M. MATHEWS said: When the committee representing the Louisville Surgical Society asked me to be one of the speakers to-night, I gladly consented, because it was an opportunity to pay a slight tribute, at least, to my dead friend. And yet when I was confronted with the duty of writing the same, I must confess that my pen near failed me. The question was, from what standpoint shall I speak of Palmer? As Ed. Palmer, my friend? As Dr. Palmer the successful physician and surgeon; as Professor Palmer, the distinguished lecturer; or as Palmer, the wit, orator, dilettanté? If one were standing on a street corner, and were to see a horse dashing down the street driven by a handsome man, of small features, a small but attractive moustache, spectacles adjusted to a nicety and hair brushed as if to attend an evening reception, with sparkling eyes, and with dash and enthusiasm, with negligé shirt and coat to fit the man, with a "Hello, old boy!" That is Ed. Palmer. If one happened in the sickroom and heard a knock at the outer door, which upon being opened admitted a man above the average height, with a countenance beaming with bright smiles, a hand that clasped another with firmness and fidelity, with a voice as musical as a woman's, with a step as vigorous as a girl's, with words of cheer and hope for the patient, with the bringing of flowers in lieu of medicine, and smiles instead of tears, who with his going out, left the sick and afflicted the better that he had come. This is Dr. Palmer. If your footstep should have been near the door of the lecture hall of the old university down on Chestnut Street, on some pleasant afternoon, you would have seen a man run up the flight of stone steps with the agility of a boy, disappear a moment from view; when the voices of many students and the clapping of many hands would betoken that a favorite stood before the class. If you were within distance to hear the clear-cut sentences, the logical reasonings and deductions, the beautiful similes, the wonderful descriptions, the drawing of word pictures, amid the shout of applause. This was Professor Palmer. But if you would see the man in his element, go with me where sat at table friends in a banquet hall. Amid the strains of music, the perfume of flowers, the clattering of glasses as they bespoke mirth and good fellowship, the laughter of the guests, the presence of women, this is where Palmer was wont to linger. As a voice was heard, like the clear ringing of a bell, so well known to all of us, silence at once prevailed, ears were held expectant, eyes were strained in the effort to see, men and women alike stood for vantage ground, and every word that fell was as a gem divine, every sentence as refreshing as the falling dew to flowers. Dramatic in delivery, terse in expression, a voice as musical as a rippling brook; in form like an Apollo; his dress a model; his elocution that of a finished orator; the climax like the calm that succeeds the storm. Before the applause has ceased the soft low notes of the voice that had entranced in declamation, now soothes to rest in song, and many an eye is dimmed with tears and hearts made glad as the strain of "My Old Kentucky Home" is sung as he alone could sing it. This is Palmer the *superb*. Palmer possessed many characteristics that stamped him with originality. He was a positive character, and yet, unlike other men, did not make enemies by being so. He had no secrets; what he said or did was open to the inspection of the world. He was an enthusiast about all things. He thought the United States the best of all nations; his State the best of all States; his city the best of all cities. His horse could outrun any other horse, and his dog could whip any cur in town. His friends, he believed, were as true as steel, and his sons—why, other boys wern't in it! This enthusiasm was born of his nature, and he loved those things so well that he was brought in contact with, that nothing could shake his faith. His wit scintillated like the diamond and was as sparkling as champagne. Jokes told by him suffered nothing by age. A medical gathering without Palmer was stale ale without its froth. His nature was continually effervescing, and running over with good humor; with a physique that was perfect, and continued good health, it is no wonder that he always expressed himself as feeling like a "2-year-old," and that he was in the race to win. Sorrow never had an abiding place in his breast and he had no time

for tears. He threw melancholy to the winds, and often physic to the dogs. His laughter was contagious and his good humor perennial. He did not "fling away ambition," but profited by it. His industry was wonderful and his success unbounded. He wasn't governed by policy, but every one knew where to place him. He was either on one side or the other and knew no middle ground. Had he been a politician instead of a doctor, he would have gone to Congress or to the Senate. Had he turned his attention to music, the opera would have had a brilliant star. He believed that life was worth the living and that croakers should be killed. He died as he had lived; he sped through life like a meteor, brightening everything in its path, and went out with a flash. I would not clothe his bier in black or lay him away with mourning. Rather strew flowers upon his grave and let the rose and hyacinth waft their fragrance back to us, emblematic of his life. He speaks to us through laughter and good cheer, and we will remember him in sunshine and not in rain. Peace to his ashes!

DR. L. S. MCMURTRY said: It is an old custom of our profession to render deserved honor and respect to the memory of our departed colleagues by public eulogy. An eulogium of any man is confessedly a difficult task; but the embarrassment is greatly increased when, as in the present instance, it must be brief and the subject is an active, talented, accomplished, versatile individual, who for years occupied a familiar and conspicuous place in public and professional esteem. Edward Rush Palmer was no ordinary man; indeed, in more senses than one, he was a remarkable man; an acute thinker, a facile writer, an erudite and accomplished teacher, an orator, a resourceful and successful practitioner, pursuing his work with the activity of an enthusiastic mind in a vigorous body. In all these relations he was prominent among his contemporaries, recognized and esteemed by the profession at home and abroad. Though dying in mid-career, Palmer had occupied a prominent position in the profession for almost thirty years. Few men ushered into responsible professional duties at so early an age are equal to the demands and exigencies imposed upon them. He was on the rostrum when he had barely passed his majority; he was actively engaged in practice while almost a youth. Others, more competent than I, will speak of his abilities as a teacher. I knew him best as a practitioner and a fellow-member of our medical societies. For years I have been in cordial and pleasant association with him in these organizations. Of late years the medical societies have grown in importance as a means of scientific improvement. They are the post-graduate schools of the profession. In our city the medical societies have cultivated social along with scientific advantages, bringing the members in more intimate and cordial relations. In State and national organizations Palmer was a prominent figure, always a favorite with the delegation from his city and State. Upon our local societies he was a regular attendant and participated actively in the discussions. He was the life and charm of those occasions when social pleasure abounded. Who that knew him can ever forget his great animation, his vivacity, his rich sonorous voice, his personal charm, his bright face and handsome form, his magnetism, and the ease and grace of his manner? It was the possession of these qualities, superadded to a thorough knowledge of his profession, which made him such an attractive and impressive figure in the medical societies to which he belonged. I would not convey for a moment the impression that his function in these organizations was unimportant; on the contrary, he was a worker. Some here present will doubtless recall his last paper read before the Academy last spring, containing many original views upon a subject of great practical importance. His papers always bore evidence of careful study, presenting bold and often original views, with practical application. As an after-dinner speaker he was the equal of the best the profession of Kentucky has ever had, and this is saying a great deal. It will be many years before those who heard his brilliant speech at the banquet in Frankfort three years ago will forget it. It was on the occasion of the annual meeting of the Kentucky State Medical Society, and while the subject was announced (at his request) as "Where are we at?" the sentiment could more appropriately be expressed as "Kentucky, its products and its people." His remarks were preceded by singing the first lines of that song of which he never tired, "The Old Kentucky Home." Indeed, he was at his best on such occasions, and carried his audience with him by the magnetism of his person and manner, the charm of his voice, and the power of his eloquence. He will be keenly missed in our medical societies, where he was an attractive and marked personality. The Louisville Surgical Society was, as has already been stated, his special pride and care, he having been the moving spirit in its organization and an active promoter of its usefulness. I doubt if those who had only a cursory acquaintance with Palmer during his latest years have any adequate idea of the extent of his general literary culture. In an address delivered some years ago he said: "I remember when I entered the profession that I despaired of ever being a successful doctor, and became almost half convinced that I had mistaken my vocation. Under that cloud I laid my Watson and Stillé aside and spent much of my time with the best poets, essayists, and fiction-writers of the age. As I remember now the course I took, it is with a pleasure which more than repays me for the serious misgivings I then felt, in thus supplementing the course which my seniors had advised. Perhaps it was this experience which has led me to believe in a doctor's being a man of varied learning, and in his cultivating a taste for some improving pursuit or study with which to occupy his leisure hours."

For those who saw Palmer only in his hours of merriment it was difficult to realize that there was a serious and earnest side to his nature. His physical endurance was most remarkable, and enabled him to appear as a man of ease and pleasure after a day given to the toil and exactions of a busy doctor's life. In him, Nature had blended, in an exceptional manner, apparently opposing qualities. When he had passed the fiftieth milestone his body, mind, and heart seemed as gay and undaunted as when in the twenties. One could scarcely realize at times that he was a hard-working physician and surgeon, devoting his life to our profession and making a handsome competency for his family.

For a number of years Palmer was actively engaged in a large general practice. During the last decade of his life he limited his practice to the specialty with which he became so prominently identified. He was thoroughly in sympathy with all classes of people, and was eminently successful both in general and special practice. It needs no argument in this presence to prove that such success is born of merit; that such attainment in our profession comes only by virtue of earnest labor, ability, self-denial and determination.

No human character is, or can be, entirely perfect. All men have their defects, their sins of omission and commission, and their faults. Palmer had his, but of one base quality known to human character he was singularly free; that is hypocrisy. Concerning his own life and conduct he had no secrets, and ignored all concealments on all occasions. He was equally popular with the people and the profession. His humanity drew to him friends from the lowest classes, and his sunny genial nature attracted the highest. Nothing could more strikingly attest this than the large representation of all classes of the people who composed the immense gathering on that midsummer day when the last sad rites were held above his lifeless body.

Mr. President: the setting sun, as it sinks into apparent oblivion, illuminates with indescribable splendor the horizon, making beautiful the very mists and clouds which obscure its passing radiance. Our friend and colleague passed from life and joy and health and vigor into the silence and apparent oblivion of death almost within an hour. Like the setting sun, the memory of his life of cheerful duty, his bright genial nature, his generous friendship and his humanity will illumine the horizon of the present long after his departure. When in the years to come, we think of him, we would believe with the poet:

> "There is no death; the stars go down
> To rise upon some fairer shore."

DR. T. L. MCDERMOTT, said: I scarcely know where to begin the recital of a story, so prolix in detail, so embellished in its outline, so redolent of glamour and variety. The lovely lines that permeate its majestic horoscope are aglow with all the radiant hues that fancy, in her wildest weavings, could adorn a human mold. A career begun in youth with all its exuberant ardor undimmed through a stately manhood and rounded out in its fullest fruition before age had painted a line on its progress or dimmed a single lustre of its renown. Possessed of a spontaneity so homogeneous and irresistible that thought and action were simultaneous, he charmed every circle that he entered and left a regretful void as he sped his checkered way. There was no half-hearted, lackadaisical symposium in its meteoric flight; over breakers or buffets, or velvets or violets it pursued the same tremendous tenor—undaunted by obstacles that seemed insurmountable and hopeful under reverses before which many have succumbed. The indomitable pluck that dominated his youth continued perennial to his end. A child of audacious genius he was fruitful in resources and skilled by in-

tuition. Intellectually omnivorous he gathered as he grew, and scattered with lavish generosity from the primrose path over which he completed his triumphant career. The geniality of his manner obliterated every milestone on the journey, and the unfaded garlands of its blushing youth bedecked his ageing brow. He seemed never to grow older. The sunny warmth of his charming personality was a conspicuous attraction in this paragon of good fellowship. It irradiated the shadows of a festivity, however umbrageous, and glinting through the darkness betokened the star from whence it shone with such graceful brilliancy. Robust in thought, fertile in expedients and princely in execution he was a fitting rival for contemporaneous distinction. Always facile of speech and lordly of presence he commanded attention in any gathering, social or professional, where Fate's fitful caprice enticed his intrinsic display. A jolly fellow with the boys on the hustings, a rampant lion in debate, a serious doctor at the clinic, he was the same representative disciple of advancement and progress, versatile always, and always a leader. No pent-up Utica contracted the stubborn exploitation of his views, nor minimized the logical deductions of his philosophy. As a youngster, in his own estimation, his gun was the truest, his pointer the keenest of scent and trail, his neckwear the brightest, his horse the fastest. In manhood the same effusive enthusiasm enkindled the most rapturous admiration of his possessions. His undertakings of whatsoever nature were conspicuous for the domineering push which brooked no restraint, and were dampened by no defeat. His mirth and *bonhommie* were contagious and inexhaustible, and many rare hours were the gifts of his genial companionship. All classes, high or low, paid tribute to his infinite zest and sparkling good humor. I knew him intimately for more than thirty years, and in that long interval found much to admire in his frank and friendly intercourse, so that if my faint praise may seem eulogistic, it is assuredly true and unqualifiedly sincere. I am sure that at this time I can not express the deep grief universally felt at his sudden and untimely departure. In the midst of the most active plans for future work, surrounded by all the associations that might insure happiness and reward, his star of ascendency was rudely snatched from its zenith, and science and the hearthstone despoiled at a blow.

Such fateful catastrophes are rarely realized, as is usually the case, on their occurrence, but as time in its flight portrays the void, the bitter reflection enhances the sorrow of his loss. Would I had the power to wreath in tender words the chapter of anguish that would indelibly express our mournful regret, or fittingly picture the measure of our enduring esteem. He certainly had no enemies of his own seeking, for he was frank and forgiving and generous to a fault. If any such survive him they do him a grievous wrong. His instincts were always peaceful and his pursuits led into reposeful enjoyment. A day at the garden, a night at the fireside, or frolics in the club, with a quiet circle, accorded best with his measure of fun. There was nothing sinister or bellicose in his temperament, possessing to a rare degree the gentle courtesy that abhorred the brawl. A most exemplary trait in his disposition was the utter absence of vindictiveness. He never brooded over a rancor nor encouraged an enmity. "Life was too short,' as he tersely expressed it, to cherish an acrimony. He believed in extracting the sweets and avoiding the thorns that infested the way. Into politics, as everything else, he plunged with a rush, betraying the intensest interest in its various details, and commanding success by his ultimate triumph over some obstinate and powerful opposition. With the resignation of his trust the city lost one of its foremost friends and ablest legislators. He was a constant student through his entire life. I well remember his close application to the prosecution of his studies when we first became intimate. For hours each day, during the coldest winter, he and his pal pursued a course of dissection in the vacant university building, depending for warmth upon a jug of hot water procured from home. There was quite a contrast between the angular sallow youth of that day, and the handsome, cultured and accomplished Chesterfield of our own era. As the callow student blossomed into the full-fledged doctor, there was no more familiar or popular figure on the public ways than Ed, and his trusty little yellow mare, called "Puss," who shared the fruits of his attenuated exchequer, but drove him finally to prominence and wealth. His wandering spirit has found an abiding peace where we hope he is happy and in repose. "Alas, and our poor Yorick!" no more shall set the mellow table in a roar, nor paint incarnadine the laggard steps of revelry. No more above the din and choir of wine and wassail will his shouting accents breathe the poet's fire, nor sing the roll of music's measure to hearts and ears that loved their roundelay. No more his lingering tones around the festive board, when sterner speech gave rein to flowing thought and wisdom broke the spell and the mists of noisy rioting. No more the "Round Table" conclave, with sparkling wit and ready repartee, where the tint and tinsel of social commingling gave the lifeless limit to enduring friendship and unending joy. Gone, all gone, and there remains in the storied urn the ashes of a magnificent conflagration whose coruscation delighted the past and will live in the future. Gone the hearty smile, the cheering words, the breezy greeting; gone the attentive counsel, the helpful hand, the winsome friend. In a labyrinth of love is garnered the choicest remembrance of his communion, and in a silent niche of memory will survive for all time the idol of his day.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from October 26, 1895, to November 1, 1895.

First Lieut. James M. Kennedy, Asst. Surgeon (Camp Merritt, Mont.), is granted leave of absence for one month, with permission to apply for an extension of two months.

First Lieut. Merritte W. Ireland, Asst. Surgeon, will proceed from Ft. Stanton, N. M., upon the abandonment of that post, to Benicia Bks., Cal., and report for duty at that station.

Capt. William B. Bannister, Asst. Surgeon, is granted leave of absence for one month, to take effect on or about Nov. 10, 1895, with permission to apply for an extension of one month.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending November 2, 1895.

Surgeon M. H. Crawford and P. A. Surgeon J. E. Page, to the U. S. S. "Boston."

P. A. Surgeon E. P. Stone and Surgeon G. P. Bradley, to hold themselves in readiness for service on the "Indiana."

P. A. Surgeon F. J. B. Cordeiro, to the U. S. T. S. "Constellation."

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the sixteen days ended October 31, 1895.

Surgeon George Purviance, granted leave of absence for twenty-five days Oct. 28, 1895.

P. A. Surgeon G. M. Guiteras, granted leave of absence for thirty days, Oct. 18, 1895.

Surgeon W. H. H. Hutton, granted leave of absence for twenty-five days, Oct. 23, 1895.

P. A. Surgeon G. B. Young, relieved from duty in laboratory of Bureau, and directed to rejoin his station at Key West, Fla.

Asst. Surgeon E. K. Sprague, to proceed from Key West., Fla., to Key West Quarantine Station, for temporary duty, Oct. 16, 1895.

Asst. Surgeon Emil Przechazka, to proceed from Cairo, Ill., to Detroit Mich., for duty, Oct. 31, 1895.

LETTERS RECEIVED.

American Laundry Machinery Co., Cincinnati, Ohio; Ayer, N. W. & Son (3), Philadelphia; Antony, H. G., Chicago; Anderson, G. K., New York city; Avant, Dr. A. L. R., Patterson, Ga.; Allen, Dr. F. C., Brownsville, Tenn.

Burr, C. B., Flint, Mich.; Bacon, C. S., Chicago, Ill.; Brown, F. F., New York city; Boston Daily Advertiser, Boston, Mass.; Blodgett, F. J., New York, N. Y.; Boehringer & Soehn, New York city.

Coe, H. W., New York, N. Y.; Cochran, Jerome, Montgomery, Ala.; Chambers, J. H. & Co., St. Louis, Mo.; Conrad, C. H., Warner, N. Y.; Colgrove, E. H. & Co., Chicago.

Dukehart, Thos. M., Baltimore, Md.

Fairchild Bros. & Foster, (2), New York city.

Gibson, Dr. C. R., 159 Bloor Street, Toronto; Gaenslen, Dr. Fred J., Madison, Wis.

Hummel, A. L. Advertising Agency, New York, N. Y.; Helena Public Library, Helena, Mont.; Hillis, J. D., West Haven, Conn.; Hubbell, Alvin A., 212 Franklin Street, Buffalo, N. Y.; Haldenstein, I., New York city; Holland, Dr. J. W., Philadelphia; Harvey, G. F. Co., The, Saratoga Springs, N. Y.

Instant Cut-Off Co., Pt. Huron, Mich.

Kegan, Paul, French, Trübner & Co., Ltd., London, Eng.; Kyle, D. Bradden, Philadelphia; Kell, Dr. J. Baillie, New Cumberland, Ohio.

Laplace, Dr. Ernest, Philadelphia.

Matos, R., New Orleans, La.; Magruder, Dr. G. L. (2), Washington, D. C.; Miller, Geo. W., Joplin, Mo.; Mariani & Co., New York city; Massey, Dr. G. Betton, Philadelphia; Marks, A., New York city; McKesson & Robbins, New York city; McCollom, Wm., Brooklyn, N. Y.

Post-Graduate Medical School, Chicago, Ill.; Priest, W. R., Concordia, Kan.; Prentiss, S. B., Washington, D. C.

Roy, C. Dunbar, Atlanta, Ga.; Robinson, Dr. W. D., E. Orange, N. J.; Regar, Geo. H., Advertising Co. (2), Philadelphia, Pa.; Ryman, H. M. (2), New York city; Roseberry, B. S., Lacon, Ill.; Ridlon, J., Chicago, Ill.

Stratton, F. C., New York city; Schering & Glatz, New York city; Shlensky, I., Peoria, Ill.; Small, J. W., Yonkers, N. Y., Savage, G. C., (2), Nashville, Tenn.; Stillson, H., Seattle, Wash.; Sykes, G. A. (2), New York city; Schwartzkopf, P., Chicago; Smith, Dr. L. E., Chattanooga, Tenn.; Smith, Alfred A. & Co., Washington, D. C.; Schimmel, M. S., Baltimore, Md.; Seiler, Geo, Alma, Wis.; Smalley, Dr. J. G., Cornersville, Ind.

Thomann, Gallus, New York city; Trowbridge, L. S., Detroit, Mich.

United States Army and Navy Journal, Bennett Building, 93-101 Nassau Street, New York.

Vogeler, Adolf G., Chicago; Vance, Dr. A. J., Harrison, Ark.

Warren-Scharf Asphalt Paving Co., 81 Fulton Street, New York; Walker, Dr. W. H. (2), Oakland, Texas; Watkins, Dr. W. W. Moscow Idaho.

Zumo Pharmacal Co., St. Louis, Mo.